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East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

No. 1992

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BRIEFS

SFRY SEPARATOR FOR USSR--A steam separator for a nuclear plant in the USSR, weighing 280 tons, has been loaded in the port of Kardeljevo on a special ship for heavy cargo, the "Thor Scan", which was rented by the Dubrovnik "Atlantska Plovidba" shipping line from a Danish shipowner. The steam separator was made by the Sarajevo "Energoinvest" enterprise [Split SLOBODNA DALMACIJA in Serbo-Croatian 27 Feb 80 p 1]

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GERMAN DEMOCRATIC REPUBLIC

COMBINE PRODUCTION METHODS SEEN IMPROVING CONSUMER GOODS

East Berlin EINHEIT in German Vol 35 No 1, Jan 80 signed to press 7 Dec 79
pp 53-60

[Article by Prof Dr Wolfgang Opitz, economist, general director, VEB Household Appliances Combine, Karl-Marx-Stadt: "High-Quality Consumer Goods for the Population and for Export." For translations of related information see the following JPRS issues of this series as indicated: on consumer goods improvements, 73195, 11 Apr 79 No 1879, pp 21-27; on combine system's development, tasks, 75132, 14 Feb 80, No 1980, pp 15-26; on combine production efficiency, 74383, 16 Oct 79, No 1943, pp 24-34; on combine management problems, 74858, 3 Jan 80, No 1968, pp 32-37 and 73083, 26 Mar 79, No 1872, pp 13-40]

> [Text] How does the VEB Household Appliances Combine, through using scientific-technical data and good market research, ensure a production that meets the growing demands and requirements? What efforts are made to produce more of the goods in new demand? How does the combine's collective adjust to those demands? These are questions answered from the experiences of the one-year operation of the combine.

Consumer goods production development is a crucial element in the eighth and ninth party congress policy for the good of the people. The ninth party congress resolutions give a clear guideline for developing consumer goods production in harmony with the people's vital material and cultural needs and with our economic possibilities, mainly using our own resources and reserves for it, starting from the demands of our population and, at the same time, taking into account our country's export needs. The SED, the party program says, "regards as a political task of the first rank to assure the population of stable consumer good supplies at a constantly climbing level" and focuses on producing consumer goods "that meet the needs of the population in their use characteristics and fashionable designs."[1] Entirely in those terms, a significant consumer goods production boost is among the most important focal points of the 1980 draft plan. "The point is," Comrade Erich Honecker said, "to ensure basic commodity supplies for the population, including services, at stable prices, rentals and transportation rates. At the same time we must significantly expand the supply in high-quality consumer goods in good design, fashionable and attractive, in conformity with demands."[2] So we must increasingly take account of the fact that when the citizens make more money, their demands for products do not only grow but change in structure in that the demand for high-grade goods rises at an above-average speed.

In our household appliances combine, the high political responsibility incumbent upon us as a producer of consumer goods for improving the population's material and cultural standard of living is a leitmotif for all our thoughts and actions. We find it a great obligation to make still more intensive efforts so that our products excel through their fine quality and are in supply according to demand. We know to what extent consumer good supplies in fine quality that meet demands, are reliable in their use and easy to maintain, as well as a customer service that functions well and the availability of the needed spare parts, contribute to well-being or--obversely--can lead to annoyance. We also know that with respect to volumes and qualities in our supplies it cannot be a matter of either/or but must be the one as well as the other. In further boosting our output and while responsibly taking account of the real needs, we shall see to it that highest quality and most attractive products will receive an ever greater importance in our production program. Then we shall meet our obligation to our society, and thus to the mission of our party, to contribute a maximum to the further implementation of our program for growth, prosperity and stability.

Aware of our political and economic responsibility, our combine management and party organization in their ideological work concentrate on further shaping the kinds of attitudes in thinking and conduct among the working people that serve the boosting of our output, the quality improvements of our products, and the better utilization of basic assets, material and energy. We especially promote all ideas and measures which advance our scientific-technical progress, for thereby above all can the needed performance improvements be assured. As much as in the campaign programs of the basic organizations in honor of the 30th anniversary of the founding of our republic, in the future likewise the important thing will be to concentrate on ensuring the science and technology plan, the tasks of socialist rationalization and working in an organized fashion with the innovators and young people in the combine and thereby make prevail successful methods of competition such as the personal plan obligations of Erfurt's refrigeration furniture designers, the work with efficiency brigades and agreements in the Schwarzenberg washing machinery plant, or the work with programs on large-scale reductions of production consumption.

Advances made after one year of operations demonstrate the combine has fully met its acid test. Through the initiative, creativity and diligent work of the nearly 24,000 working people, the achievements of the innovators, technicians, engineers and economists, and the commitment of the managers, the 1979 annual plan was met and was surpassed for some items. The output of products with the "Q" quality mark was by 11 percent higher than in 1978, so that now more than half of our output under test and classification requirements has this mark of merit. There were 37 products of a higher quality that were put into production on or ahead of schedule. Approximately 190,000 working hours were saved above and beyond the plan, and a 24-percent increase in means of rationalization was introduced.

These results underscore that the merger of 28 enterprises into one combine last year (26 enterprises producing technical consumer goods plus ancillary supplies, one service enterprise and one engineering enterprise for rationalization) has had favorable effects on our performance capacity and makes more efficient work possible. As with the forming of combines altogether, so also with the forming of the household appliances combine, we are pursuing the goal to accelerate scientific-technical progress and reach a much higher quality and efficiency in our work. As the basis for it, everything that organically belongs together and is part of a coherent reproduction process was put together in the combine. All R&D capacities and the production all the way to the sale of washing machines, refrigerators, gas, electric and coal stoves, gas ovens, gas water heaters, enamled and aluminum utensils, cutlery, cutting tools and steel tools, and a broad assortment of the "thousand little items" of everyday use thus were combined within one combine. And so the foundations were laid for the uniform management, planning and balancing of the development, production and sale of household appliances in the combine. It is now all the more important to make a full use of the possibilities created for a concentrated application of the scientific-technical potentials, the most suitable use of the material and financial assets, highly effective investment activity, the standardization of components and elements, and thus for further steps toward production specialization and concentration. Ultimately all these steps and measures, which were after all not brought in as ends in themselves, must serve one single concern: to produce modern and efficient household appliances at reasonable prices and put them on the market in a manner that suits the demands of all customers.

The Economy--The Touchstone for Scientific-Technical Progress

If we succeeded last year in putting products in production and on the market like the EHR-72 electric range with an airvent baking compartment, a new set of household knives, the HG-4/633 gas stove and the cutlery model 990, all appliances that find approval far beyond the borders of our country, the main reason for it was that we bestowed the foremost rank on scientific-technical progress in our management activity. For the future we deem this to be also the most important guaranty for meeting the growing demands for the volumes, qualities and costs of our products and for making sure at the same time that the work the working people do in our combine becomes more productive and easier and its creative character be further developed. To tap further reserves this way is a major priority in our management activity and a basic concern in the work of the party organizations.

In fulfilling our 1980 plan tasks and in our long-term work as well we proceed from the realization that economic interests are met by the interest of the individual consumer in combining better qualities with less energy and material consumption in production and use. For the economy, increased effects of the energy and materials economy can lead to considerable savings--all the way to investments. For the individual, the advantage of less expense due to a reduced energy consumption in the washing machines, refrigerators and so forth may mean that the household appliances handled daily weigh less and save time in their use and maintenance. All the more emphatically we shall try, through a concentrated use of the combine's R&D potential, to work out designs that have already, as in the new GS-150 freezer, proven themselves. For that product it became possible to get a 1.3 kilowatt hour energy consumption per 24 hours, which is in line with the international scientific-technical top standards.

In the new fully automatic WVA-800 washing machine, developed in cooperation with our Soviet partner, along with raising the rate of centrifugal revolutions, we got a saving of 0.13 kilowatt hours of energy and of 2 liters of water per kilogram of dried laundry. In the new EHR-72 electric range with an airvent baking compartment and improved insulation, we got at least 20 percent improvement in energy utilization. For the cutlery, in addition to that in chrome nickel and chromium-steel, we now also offer increasing numbers with china, wooden or plastic handles. Apart from our being able to partly save the expensive Nirosta imports, we now also get new possibilities for attractive designs. For the same consideration we finished the development of a set of manually operated household appliances; the new designs have already been put into production. The use of plastics saved cast iron, tin and light-metal casting, and the color variation possibilities were vastly increased.

These examples may show how skilled work with duty notebooks for R&D themes, relentless comparisons with international scientific-technical top standards, our close cooperation with partner enterprises and institutes in the USSR and other socialist countries, the defense of interim or end performances of tasks under new directives before the general director or minister, and the political-ideological influence brought to bear by the science and technology control groups of the party executives have contributed to improving the level of our scientific-technical performance. They also confirm that positive effects have come from introducing performance-related salaries for university and technical school cadres, from awarding government prizes to entire collectives and individuals, and from other moral and material incentives. What is necessary now is further to encourage the initiative and dedication of the scientific-technical cadres principally by giving a uniform management to research, development and investment activity.

Suitable and beautiful design is gaining increasing importance especially for consumer goods, as they must increasingly satisfy not only the material but also the ever increasing cultural demands of our population and are gaged against high economic, scientific-technical and esthetic criteria on the world market. A central design workshop was set up in the household appliances combine to ensure uniform and complex designs in certain commodity lines and accomplish basic design features in the various products of the combine. Together with the better opportunities for also including design features in the combine's strategic work, such a central workshop has the advantage that the designers' work itself becomes more efficient. Thereby the designers can from the outset be drawn into the planning, preparation and development of new products, and firm ties can be established with contiguous areas such as the furniture industry, or glass and ceramics, and the necessary working relations can be established with the Office for Industrial Design, the Standardization, Measurement and Commodity Testing Office (ASMW), and other central institutions. That kind of a procedure allows us to ensure to a high degree that the concerns of economics and design are reconciled with each other from the very beginning and that we can, by rapidly bringing to realization new scientific-technical and design solutions, quickly put commodities on the market that meet the expectations of our domestic and foreign customers.

For instance, the "Good Design" diploma our cutlery set 1000 got, or the "Top Design Performance" award earned by our gas heaters, our enamel-coated household china, frying pan 400 or cutlery models 990 and 1000, for example, reflect the success of our work in this field. Still more we expect of the work of our designers in further improving their working conditions by setting up a model workshop and by further expanding their capacities, and that is exactly what we are doing right now.

Procedural Development and Building Means of Rationalization

Putting novel and improved products in production and producing them at favorable prime costs are always matters that raise many scientific-technical, economic, organizational and even ideological questions. Under mass production conditions there are then especially the matters of methods development, and the design and construction of means of rationalization and of devices, tools and testing equipment, that warrant great attention. It therefore is necessary in management activity to pay attention from the very beginning of developments to the interrelations between constructive design solutions and the technology for the manufacture of the commodities. Design and technology both affect the qualities and the prime costs greatly. Take as an example the structural enameling process for gasheaters as developed jointly between our Berlin enterprise WAW (Waermegeraete- und Armaturenwerk) and the VEB Plastikwerk in Berlin, which had been suggested by the working team for "territorial rationalization" at Berlin-Koepenick's SED kreis headquarters. By the use of that process, enameling rejects were reduced by 75 percent. The need for a second coating could be reduced from 31 to 8 percent, and between 100 and 150 gram of valuable material could be saved per square meter of enameled sheet. Added to this economic plus was a positive esthetic effect so that this product--meanwhile also given the "Top Design Performance" award--is one that not only our own population likes to buy but that is also in export demand and can be sold more lucratively. Right now we are working on applying this process also to other enamel products and are in the position to offer as the first outcome of those efforts enamel-coated sets of china.

Under the conditions of large series and mass manufacture typical of our combine, the crucial factor for a higher performance by the working people and for ensuring high growth rates in labor productivity and efficiency lies in our building our own means of rationalization and our using them purposefully. There are many operational sequences in our combine enterprises for the mechanization and automation of which we could not and cannot expect techniques to be handed to us by our machine building enterprises because we need them "tailor-made." For that reason even years ago it became indispensable for us to create our own potentials for developing and building special machinery in some of the enterprises that now have become parts of the household appliances combine. In addition to efficient capacities for constructing means of rationalization in such larger enterprises as the Schwarzenberg Waschgeraetwerk, dkk Scharfenstein, or Auer Besteck- und Silberwarenwerke, we established an economic unit with the VEB engineering enterprise for rationalization which at present, with nearly 650 persons employed, solves tasks in technological project planning, process development and especially in design and in building means of rationalization for the combine. In focusing on the combine's major technical process priorities--sheet reshaping, assembly and joining techniques and surface treatment--that whole enterprise has a unique appearance. That we have such a unit, which is responsible directly to the general director, enables us to ensure in material-technical terms the scientific-technical and economic development of the various production processes in the combine over the long range as well as to help operationally in eliminating any problems that might arise right during the production process.

It prevents economic loss and--by the "dependency relations" created--enhances the feeling in the enterprises that they all belong together as well as the responsibility of each and every enterprise toward meeting the tasks of the combine as a whole. Circa 30 percent of the investments the combine has annually available for equipment is currently used for the production of means of rationalization. That share will rise further in the future because building means of rationalization, for one thing, is the basis for greater productivity and labor efficiency, which means more and better products for our population and for our export, and it, secondly, serves the improvement of the working people's working and living conditions in the combine.

For example, through the development and construction of assembly lines for the grinding and polishing of utensil sets, labor productivity was doubled, and the heavy physical and monotonous manual work on wheel and polishing stands was largely done away with. Ten years ago there were still circa 120 workers needed for that. Today only 50 are needed, and they are primarily carrying out control and supervisory functions in that department. These rationalization projects are taken care of in close cooperation with the territorial party and government organs and the enterprises in the territory. Upon the initiative and under the supervision of Aue SED kreis headquarters, nearly 30 enterprises of the territory from all the different fields were involved in the solution of the tasks, and also for 1980, in addition to what the Auer Besteck- und Silberwarenwerk combine does in preparing another generation of automatic grinding and polishing machinery for that production time frame, cooperation is being organized with enterprises in textile machine building, machine and processing tools, Wismut and other enterprises in the Aue territory. That we thus also see enterprises manufacturing means of production that are getting directly involved in this cooperation and help create prerequisites for increased output and for improving the quality of commodities in consumer goods production enterprises is something we consider an effective form of exercising the responsibility every enterprise and combine bears, in the sense of our party resolutions, for producing high-grade consumer goods.

Many tasks in developing and building special machinery require efficient capacities for process development and the technological streamlining of production processes. A typical example of the combine is the development and use of our ball bearing conveyer-line process for manufacturing the blanks for enameled china. It did away with the cupping process and also laid the foundations for an interlinking manufacture obviating manual operations in adding or removing blanks. This process reduces the material needed by circa 20 percent, labor productivity increases by 30 percent, the use of tools is reduced, and much more variation becomes possible in the design of household china. We are currently working on further applications for this process, for which our own engineering enterprise for rationalization develops and constructs the necessary technology.

Important economic and social effects in our economy come from the increased use of automation connected with microelectronics. By using robots in our combine, we can close the technological gap that had opened between highly productive and automatic machinery for manufacture and processing and our manual feeding and removing of blanks during and after processing. A complex use of feeding equipment and industrial robots in years to come will greatly release men from heavy physical work that is monotonous and hazardous to their health. Through these improvements, for example, the automatic sprayers in the VEB WAW enterprise in Berlin increased the labor productivity by 100 percent and reduced rejects by 3 percent and make-up work by 6. Based on these fine experiences, our engineering enterprise for rationalization in close cooperation with the Engineering College of Zwickau and with the Engineering Office for Electrical Apparatus developed and built the prototype of an industrial robot with multipoint controls. The production use of this robot comes in 1980 with the preassembly of cooking trays for electric ranges. Six more industrial robots will be put into operation in combine enterprises in 1980 and 1981. That releases manpower that can be used for more productive labor. We pay much attention to robot technology in our combine because we are convinced the robots are strategic tools due to the universality of their application and their role in further improving labor productivity.

To get still more generalizations from sound experiences and a broader application of the best technologies in processes that are typical of combine operations, we are looking for new solutions right now. What is the most suitable way, we are asking ourselves, above and beyond the conveying of experiences, for managerially working on or coordinating the tasks in technological development in any given area of the combine to avoid duplication as much as possible. We think it important to activate our cooperation with universities and technical colleges and the relevant institutes in the republic and, above all, to make use of the many initiatives from working people--for instance, in the enterprise sections of the Chamber of Technology--, whereby further potentials can be tapped for working on the combine's scientific-technical tasks.

All the examples and experiences we have gathered make emphatically clear that the rapid growth of our productivity and labor efficiency decisively depends on the acceleration of our scientific-technical progress.

Consumer Goods--A Concern for All of Industry

The scientific-technical level of our products and an ever improving way of satisfying the needs of our population to a large extent depend on the diligence, creativity and achievements of many thousand working people in the ancillary enterprises.

On the technical-economic parameters of ancillary supplies significantly depend the use value, quality and, not last, the economy in the manufacture of end products. A final product in toto is no more efficient, reliable and good than its poorest component. All the more attention therefore is warranted for further advances in the qualitative and quantitative development of ancillary production and the coordination and proportioning between end product and ancillary supply industries to avoid disturbances in ongoing production and difficulties in the customer service and to foster to an adequate degree the enforcement of our scientific-technical progress.

It has been found advantageous for our work that important enterprises making exclusively ancillary products for the combine's specific needs were directly combined with the combine when it was formed. By incorporating enterprises that produce porcelain frits and electric cooking plate as ancillary supplies for the combine's finished production, for example, our own responsibility has increased for scientific-technical progress and for ensuring proportionate developments. Right now we are in the process of solving necessary scientific-technical tasks in ancillary production, and we are working on projects concerned with a performance development in those ancillary enterprises that would be in line with the increases in our final production. This way of direct incorporation, in our experience, is meaningful wherever highly specific ancillary products are needed by a combine and where, along with its specialized material-technical base, the necessary scientific-technical potentials also are available.

As our combine is under the obligation to do everything that can be done for smooth cooperation with the ancillary suppliers under our responsibility, this likewise applies to our partners in the metal working industry, the chemical industry and other branches. The party and government requirement, the importance of which was emphatically singled out at the 11th Central Committee session by Comrade Guenter Mittag, that every enterprise and combine in our economy must feel responsible for high-level consumer goods production, is something we understand to mean that those combines too which principally produce means of production must help ensure the proportionate development of ancillary supplies for the consumer goods producers and make available ancillary products on the highest standards of most up-to-date science and technology, especially means of rationalization and other scientific-technical achievements for improving labor productivity and efficiency which can be efficiently produced only through their own specific assets. At the same time it is necessary to use all reserves in the enterprises and combines manufacturing means of production so that they will themselves, favored by technological conditions and the available equipment and machinery, produce consumer goods. The china production in the VEB Eisen- und Huettenwerke Thale or the production of gas ranges in VEB SKET Magdeburg, in cooperation with enterprises in our own combine, significantly help in increasingly better supplying our population and in ensuring our housing construction program.

Customer Service and Spare Part Distribution

Of equal rank with our responsibility for making high-quality consumer goods available in satisfying the existing demands we consider our duty to ensure a high-level of customer service for the products manufactured in our area of responsibility and for import products. That also means bearing the responsibility for the proper availability of spare parts. To service the approximately 25 million large-size household appliances in the households, for which circa 8,000 different spare parts have to be planned and produced, or obtained to a still larger extent from other areas, the combine has set up a service enterprise with managements in all bezirks and two central spare part repositories. Through a priority manufacture of spare parts, monthly situation reports, including those matters in the general director's immediate sets of tasks, and developing the cooperations relations needed for it, we brought it about that all necessary repairs for gas, refrigeration and washing appliances were carried out within 6 days, and those for freezers and gas heaters within a maximum of 36 hours. Through keeping late service hours and Saturday and Sunday service hours in all bezirk capitals, and by training and employing mechanics versatile enough to repair washing machines, refrigerators and gas appliances, our combine noticeably improved its customer service in response to the Ninth SED Congress directive for the five-year plan.

The Unity of Political and Technical Management

The responsibility of the household appliances combine for diversified and attractive supplies in good quality that conform to population demands, in consumer goods, and for a high-level customer service--and therein lies the core of further implementing democratic centralism in the combine and in every combine enterprise and every collective--requires enforcing, unadulterated, party resolutions with the strength of the collective, leading the combine's working people into high achievements for plan fulfillment, and activating them altogether still more strongly for creatively participating in management and planning. The general director, consequently, relies in his management activity on the advise from the party secretaries, the science and technology control group of the party executive, the collective of the BGL chairmen, the youth and women's group and other social forces in the combine. For involving as many working people of the combine as possible in solving those tasks and, simultaneously, ensuring a uniform orientation for the political-ideological and the economic-organizational work, conferences with innovators and with functionaries, forums with apprentices and young innovators, and talks with state prize winners, engineers and technicians have been found useful. Conducting advanced training courses for management personnel--for instance in matters of microelectronics application--also has been found good for improving the performance in the combine.

We attach great value to using the working people's opinions and suggestions for the work in the combine--suggestions for long-term development and all the way down to their daily tasks. At the first party activists conference last year a discussion was held on the development of the combine up to 1985. Also for an increasing effectiveness of the work with programs for reducing production consumption, the broader application of efficiency accords, and the assigning of high technical and economic goals in the duty notebooks for the science and technology plan tasks the working peoples' direct participation is very important. No less does this hold true for the assumption of obligations in the engineers' creative passports, personal plan offers and other proven methods in conducting socialist competition. All this reveals that through the forming of the combine socialist democracy in practice keeps gaining new features and produces ever increasing effects.

Our basic organizations' campaign programs '80 are aimed at ensuring the demanding goals of the 1980 plan and at seeking a targeted overfulfillment of the plan for items like refrigerators and freezers, utensils, china and gas ranges. For our combine that principally means obtaining maximum efficiency improvements through accelerating scientific-technical progress, producing high-quality and highly reliable commodities, assuring our population of good service, and making our export tasks highly lucrative. Then the collectives in our combine will be making their contribution to the continuing purposeful implementation of the ninth party congress decisions.

FOOTNOTES

1. "Programm der Sozialistischen Einheitspartei Deutschlands," Dietz publishing house, Berlin 1976, p 29.

2. "From Central Committee General Secretary Erich Honecker's Politburo Report to the 11th SED Central Committee Session," NEUES DEUTSCHLAND, 14 December 1979, p 5.

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CSO: 2300

DETAILS PROVIDED ON NEW FERTILIZER SYSTEM

East Berlin PRESSE-INFORMATIONEN in German No 14, 1 Feb 80 pp 5-6

[Article by Dr Bodo Witter, program director, Jena Institute for Plant Nutrition, GDR Academy of Agricultural Sciences: "DS 79--Scientific-Technical Progress in Plant Nutrition"]

[Text] DS 79 is a scientific fertilizing system which was introduced in agricultural practice in 1979. It builds on methods which have proven successful before. Between 1971 and 1973 agricultural science developed EDP projects designed to serve crop production enterprises as recommendations for the use of mineral and organic fertilizers based on scientific and economic findings. The supply of crops with proper nutrients, especially with nitrogen, phosphoric acid, potassium, magnesium, but also with trace minerals such as boron, copper, manganese and molybdenum is an important prerequisite for increasing crop production, ensuring against crop failure and improving the quality of crops.

The scientific fertilizing projects and methods were passed on to the Agrochemical Study and Consulting Service of the Institute for Plant Nutrition and have been increasingly used by crop production enterprises. In the beginning there were considerable contradictions between the scientific-technical findings and the customary practice of applying fertilizer. These were reconciled to a large extent by the scientific recommendations and professional discussions which demonstrated anew that implementation does not simply mean communicating the scientific and technical findings to the users but that it is a process calling for a clear ideological position on the part of responsible officials.

Fertilizing Recommendations for Over 200 Crops

Many new findings and test results have improved the accuracy and enlarged the scope of DS 79. Numerous scientific institutes of the GDR Academy of Agricultural Sciences, universities and schools of higher learning participated in its development. Two hundred and fifty crop production enterprises and agrochemical centers were included in testing the fertilizing system.

DS 79 is in essence an advanced version of the fertilizing project consisting of building stones representing nutrients, trace minerals and manure, all complementing each other. Fertilizer formulations can be calculated for more than 200 crop cultures including vegetables and seed crops. The system makes it possible to vary the formulation according to the purpose for which the crops are intended, the crop variety, and the growth site characteristics. This method also makes it possible, for the first time, to supply soil with organic matter which affects soil fertility and provides for balanced crop nutrition. In addition to the soil tending and water economy criteria DS 79 also takes into account labor requirement and technological aspects.

As an improvement of the preceding fertilizer application project DS 79 makes possible adjustments which take into account conditions prevailing in a given year such as vegetative, weather and growth conditions. These guidelines, named "specific advice," are especially important in the case of nitrogen fertilization on cereal crops. Intensive research continues in the area of recommendations for operative adjustment in fertilizer application.

Raising Nutritional Efficiency

The quantity of fertilizer supplied to cooperative farmers by the working people has been increasing from year to year. For example, the supply of nitrogen fertilizer rose from 30 kilograms per hectare available during the 1951 to 1955 period to 105 kilograms in the 1971 to 1975 period and in 1978 120 kilograms of nitrogen fertilizer were applied per hectare. The current goal is to raise the fertilizing efficiency of chemical fertilizers and organic fertilizers such as barn and liquid manure, keeping in mind that paper agrotechnical conditions such as correct soil preparation, the right seedstock and timely tending of crops must also be fulfilled if the above objective is to be attained.

The task of applying fertilizers effectively is in accord with the resolutions passed by the 11th SED Central Committee Plenum calling for raising the operational and material efficiency of the economy. To that end the scientific findings made and the new plant nutrition and fertilizer application methods and procedures, the result of scientific and technical progress, serve as the basis for important decisions taken by plant production enterprises and their affiliated facilities, the agrochemical centers.

To further general compliance with DS 79 with the view of raising economic efficiency the minister for agriculture, forestry and the food industry passed a decree in May 1979 setting down mandatory tasks with respect to implementation and continued development of DS 79 by all parties concerned, including state organs involving the preparation of respective standards in every crop production enterprise with the aim of improving effective use of available supply of fertilizers, thereby achieving a further increase in crop production.

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CSO: 2300

PANEL EXPRESSES VIEW ON WORK DISCIPLINE

Budapest NEPSZABADSAG in Hungarian 10 Feb 80 p 5

[Discussion by Pal Banki, main department head at the Ministry of Labor; Dr Tamas Erdi, director of State Construction Enterprise No 21; Dr Lajos Hethy, section head of TARSADALMI SZEMLE; Ferenc Katona, fitter at the Vehicle and Clothing Industry Machine Factory of the Csepel Works; Gyorgy Pinter, deputy head of department at SZOT [National Council of Trade Unions] and Laszlo Karcagi of NEPSZABADSAG.]

[Text] The topic is always timely. This is especially true today when it occupies the center of attention and comes up often in conversations at the workplace, among friends or in newspaper articles. The reason is obvious: improving the profitability of production and, in particular, productivity and quality, represents an important precondition of our economic progress. This is possible only through better, more disciplined work.

The situation of work discipline, the reasons behind existing deficiencies and the possibilities of improvements were the subject of a conversation in our editorial office with Pal Banki, main department head at the Ministry of Labor; Dr Tamas Erdy, director of State Construction Enterprise No 21; Dr Lajos Hethy, section head at TARSADALMI SZEMLE; Ferenc Katona, fitter at the Vehicle and Clothing Industry Machine Factory at the Csepel Works and Gyorgy Pinter, deputy department head of SZOT. Our paper was represented by Laszlo Karcagi.

[NEPSZABADSAG:] International comparison is a well-tried method in the evaluation of our productive work. In many areas (e.g., productivity) these comparisons show a picture that is rather unflattering for us. We lag behind by more than what is justified by the technological level of our industry. Many among us can find out directly and personally that the situation is similar with regard to work discipline; this is also confirmed indirectly by a number of economic indicators. Is this really true, and if so, what are the reasons for this lag?

[P. Banki:] There is no direct way to quantify work discipline. The extent of our discipline or lack of it cannot be expressed in terms of numerical data. Even without such indicators it is nevertheless clear that, for example, work discipline is generally better in highly industrialized capitalist countries than in our country, although those who regularly study the international literature on labor matters know that they also have their share of work discipline problems. The differences are due to a number of factors. Unemployment is a great disciplinarian in capitalist countries: fear of unemployment has become a second nature. In Hungary the constitution provides for the right to work. The socialist work ethic and appropriate incentives should provide the stimulus for disciplined work; the former, however, is not yet sufficiently strong in everyone and the latter does not exist everywhere.

Another factor behind our lag is the disadvantage caused by the low level of organization in our industrial plants. In places where low organization results in stop-and-go work conditions, the worker is unable to work at an even pace no matter how hard he tries. Lack of organization is bad for discipline and leads to disaffection. One must also mention that management at the workplace often fails to show the required firmness when faced with the lack of discipline. This is related primarily to the present labor shortage. Management is afraid that more firmness would cause people to leave.

Another problem is that many managers have a mistaken idea of socialist humanity and do not impose penalties, even if deserved, because of social reasons.

[F. Katona:] Based on my factory experience I agree with the opinion of Comrade Banki. I think the most important source of indiscipline in the workplace is the lack of organization. If production is held up because of the lack of materials or spare parts and no work is being done for hours at a time (this happens quite often) then after such periods of forced idleness the manager has very little moral basis for demanding intensive work; after all, he is the person who was unable to provide the conditions required for uninterrupted work.

Lumpen [proletariat] elements who are tolerated because of the labor shortage or a false humanism and are even paid good wages have a very bad influence on the work attitudes of others.

[L. Hethy:] First, about international comparisons. I am not at all certain that the more highly developed capitalist countries have better work discipline, in every sense of the word. In their factories work is proceeding at a more even pace. Here, the idleness due to bad organization is often followed by great spurts of activity demanding a high degree of discipline and work intensity. Moreover, the level of work discipline also varies greatly in our country. There exist plants and jobs where the technology and the organization demand an even pace of work from everyone.

Problems of work discipline should not be restricted to the world of factories and manual workers. I am convinced that in many cases the areas of technical and economic administration (including management) are plagued by more discipline-related problems than manual workers. The latter, however, is easier to notice. When a construction laborer is leaning against his shovel it is clear that he is not working. An office worker can put as many files on his desk as he wants and he immediately creates the appearance of work. For decades we tried to measure the output of manual workers (with varying success) and attempted to expand the system of output-related wages. I am not saying that we should aim at output-related salaries in the administrative area but it would be desirable to try to make an effort toward performance measurement. Strengthening the work discipline of the technical and economic staff is very important to ensure progress in the general area of work discipline. It is primarily the task of the leadership to ensure that the conditions necessary for continuous and disciplined work are present in our factories. Therefore, the discipline of the leadership is a primary determining factor in the discipline of the manual workforce.

[T. Erdy:] Where in Hungary can one find a manager who can say without hesitation that everything is all right in his area?

All of this might imply that those who direct production in our country do not know what they are doing or that they lack discipline as a group. This is not what we are concerned with. We are all working in similar economic conditions and our problems are also similar. The work of enterprise leadership is complicated everywhere by chronic or periodic shortages of materials, spare parts and labor, import difficulties and lack of balance between demand and supply in the marketplace. Common problems in general have common roots; these deficiencies of work discipline are the surface symptoms caused by those factors. In my estimation, this general and common reason is the lack of balance between labor demand and supply. In the last few decades we created more jobs than we had people to fill them; we also lacked consistency in the area of output requirements. This resulted in the present labor shortage which, when combined with some other factors, led to a loosening of work discipline.

[NEPSZABADSAG:] The discussion so far seems to imply that most of the problems in the area of work discipline occurred for reasons that were inevitable. Is this true?

[P. Banki:] The laws of socialist development had nothing to do with trends in work discipline. We botched the situation ourselves, by our mistakes and measures which were not sufficiently thought through. Let us remember: for decades, we paid almost no attention at all to the organization of the work process. Our slogan was to let "each manager organize for himself"; the procedures formulated in capitalist countries and, as we know now, quite suitable for use in our country, were regarded as incompatible with our socialist principles. Later, our mistake became clear but it is very difficult to make up for our lag. It was also our fault when we confused socialist wages with social wages and failed to use the output principle in the area of material incentives. Our mistakes caused the overheating of investment which created more jobs than we could fill with our increased workforce.

These mistakes led inevitably to a situation where work discipline failed to improve to a sufficient degree.

[L. Hethy:] Quite often the problem is not the inability of managers and enterprises to provide sufficient incentives toward better work (partly because of their own faults and partly due to other reasons): they are creating certain types of disincentives. Instead of providing the conditions necessary for better and more disciplined work, they "compensate" their workers by ignoring their lack of discipline, laxity or other deficiencies. In such cases the interest of the worker lies in doing lower quality, shoddy work. I must also mention that the concept of work discipline should not be taken to mean only the intensity of work: it also includes technological and quality discipline.

We have not talked about moral incentives. The actions of people working in the factories are motivated by other factors besides material incentives. Moral incentives play an important role in disciplined work. These can be effective only if they act in the same direction as material incentives. Moral incantation is often tried to influence workers where the material foundations of material incentives have not been created. There are very few people who work honestly and well just for reasons of self-esteem: the majority needs an appropriate degree of both material and moral incentives.

[NEPSZABADSAG:] We already talked about the fact that problems in the area of work discipline are related primarily to wider aspects of economic policy. Nevertheless, we find that the same economic environment gives rise to enterprises, factories and collectives whose performance ranges from the good to the not so good. What is behind these differences?

[G. Pinter:] A great deal depends on the collective spirit at the workplace. Common experience shows that socialist brigades exercise a favorable influence on work discipline.

The experience of the trade union movement also shows that good collectives at the workplace do not oppose realistic production quotas; in some places, they are supporting them. Troubles begin when the leadership of the factory is unable, for various reasons, to ensure the conditions for uninterrupted work. Under such conditions, material incentives may have a reduced role.

[T. Erdy:] I think that better than average work discipline is almost always due to exceptional conditions. I can mention such examples from my own enterprise. For example, when we received our new cement mixers, we selected the best specialists to handle the new equipment and put them in a special wage category. The machines are now ten years old but they are still in mint condition; the people are continuing to do excellent work. Indiscipline was discouraged by fear of transfer to another area and the related loss of the advantages they enjoyed. The same is true for our construction personnel working abroad: there has never been any complaint about them and their work discipline is good.

Thus, it is possible to create exceptional situations but I think this is not our main goal. Wide ranging measures are necessary in order to change the general situation.

[P. Banki:] It is not possible to strengthen work discipline by government decree, in one fell swoop. The task needs to be started and completed at the enterprise level. It would be ideal if each enterprise would place more emphasis on demanding disciplined work. Many are waiting for some kind of signal from the authorities to start. There is no use waiting for any such thing: the management, organizational conditions and incentives necessary for better work discipline must be created at the workplace itself.

[NEPSZABADSAG:] Until now, we discussed the reasons behind our problem. There is a widespread opinion among the public to the effect that one or two harsh measures would suffice to eliminate laxity. Is this true? What do you see as the most important task facing us?

[G. Pinter:] Problems of work discipline have many components. It seems that workers, management and the leadership are equally responsible for the present situation. Therefore I am convinced that we can achieve radical improvement in work discipline if everyone would work more carefully and in a more disciplined manner wherever his post is.

[L. Hethy:] I disagree with the approach that says that problems of work discipline could be solved automatically if only everyone would work a little better. True, this requires better work but if we want everyone to work toward this goal we also need to create the appropriate conditions, including incentives. Until the latter are unsatisfactory, the above desire will remain just wishful thinking.

We all agree that deficiencies in work discipline represent very complex phenomena. This clearly implies that the single-issue solutions often suggested (for example, that a small number of unemployed could eliminate existing laxity) would not bring real, visible improvement. Quite possibly, unemployment provides a stimulus for workers to be more disciplined in many respects but it would not improve working conditions, for example. At the same time, unemployment is incompatible with our policy and our principles.

There is no open-and-shut method for the strengthening of work discipline. We must underline those elements in the process of solution which represent the most important tasks required for moving forward. I think that the most important element is the performance of enterprise leadership. The leadership must be expected to ensure the conditions necessary for uninterrupted work and to create material and moral incentives to encourage good performance. We can expect the leadership to do this only if they themselves have an interest in the strengthening of work discipline and possess the means required. In the final count, the economic leadership has the task of creating the compulsory conditions and encouragement to ensure better performance by enterprise management.

[T. Erdy:] Our situation will be much improved if we can successfully implement in practice the socialist principle of performance-related wages. This will enable us to impress on all workers the fact that more and better work leads to better wages. This can be hoped for as the labor shortage begins to decline. Differentiation according to performance can lead to better work only when other sources of money dry up and the only way to get better wages is through work performance. We have not discussed the channels that enable people to obtain income either without work or from work which provides income out of proportion to its true importance. Aside from work discipline, these are also detrimental to public morality.

Good organization and the formulation of good technical standards can stimulate relatively weak groups at the workplace to perform better. Experience shows that slackers leave these groups voluntarily because they are unwilling or unable to pick up a faster pace of work. At present, the situation is that these shirkers can find a job elsewhere, in places where performance requirements are not so tight. If the labor shortage would be eliminated then we could also eliminate the possibilities for such loafers to find comfortable jobs.

[P. Banki:] A favorable factor is that the demand for new workers on the part of enterprises has slackened significantly. With the reduced dynamics of national economic development, this trend will continue to pick up in the future. Thus, the opportunity for excessive range of choice among jobs will also be reduced.

There is some progress in this area following the cabinet resolution on the improvement of organization, although the rate of progress is unsatisfactory. Many are dissatisfied with our wage regulations but there are a number of good examples to show that the wage bill control system provides more incentives than ever before for enterprises to improve their labor management. These favorable trends provide a basis for resolute action on the part of enterprise management to start putting their house in order by eliminating deficiencies.

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DEPARTMENT CHIEF ANALYZES NEW PRICE SYSTEM

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[Article by Laszlo Racz, department chief, National Material and Price Control Board: "The New Price System"]

[Text] From the development aspect of the Hungarian price system, the years 1979 and 1980 are of determining importance. In this period we are taking definite steps in the direction of bringing industrial prices directly under the control of international competitive prices (foreign trade prices that are standard for us), working out a closed dealine program in the general realization of international price ratios for industrial products within the domestic price system.

In the wake of the changes that are being carried out, the unity of the price system will be improved. With the coordinated development of prices in and outside of industry, the entire price system will better mediate to producer organizations the influences affecting our economy. The changes concern the whole of production and consumption; the positive two-level state of the price system has been established.

To carry out these changes, it was necessary to undertake a one-time change in production and consumer prices guided by the central government. One cannot emphasize enough the role of the price change. But we know from experience that any kind of price change will permanently serve to promote the progress of the economy only if it is in harmony with objective economic endowments and if the institutional system of guidance--including the price mechanism that is established--will also make development possible according to the price mechanism that is established--will also make development possible according to the price concept.

We have made efforts also in the past for the realization of foreign-trade price ratios in domestic prices. After a given price change, however, we lost relatively fast the proper orientation which the new prices originally signified. This was also the case with the price changes following the 1973-1974 world market price explosion when we changed the price ratios but left the price mechanism unchanged, and thus we did not prepare the economy for a gradual adjustment to the international price ratios. In the background there were a number of latent causes: 1. because of overdistribution the realization imperative of our economy is not strong enough; 2. economy measured by international standards has not become, to an adequate degree, the criterion of success in management. Under such circumstances, the economy itself could not develop appropriately. The weaknesses of our economy and the institutional system--including the price system and the price mechanism--mutually obstructed rapid adjustment to international economic changes.

Under the present circumstances, the conditions for realizing international competitive prices are partly more favorable and partly less so than before. They are more favorable because definite steps have been taken, and will be taken again, to eliminate overdistribution, and thus the realization imperative is making itself felt more and more. But clearly, international competitiveness has become the basic condition for the development of our economy. Many measures have been taken to see that the economic positions (profitability, investment and wage development possibilities, etc.) which are being developed on basis of internationally competitive prices should not be modifiable on a subjective basis. The price and financial mechanism has become more normative. Economically and politically as well, we have become more mature in accepting changing prices and using them for their positive effects. In the new situation, the value-measuring and income distributing role of price has been strengthened.

On the other hand, the conditions are less favorable because in the keen international competitions it is much more difficult to adjust to these prices and because a large portion of the resources are tied down by balancing our terms of trade losses; among other things, this limits the financing of programs directed at promoting enterprise adjustment (for example, the modernization of production). Under the given circumstances we cannot count on the development of import competition. In certain partial areas the equilibrium of supply and demand falls apart in such a disrupting manner that the authorities are forced to a one-time intervention in order to ward off the threatening shortages.

For the successful execution of adapting domestically to international competitive prices it is also necessary that the preferential trends of Hungarian economic development (which derived, for example, from our membership in CEMA and from our establishment as a socialist society) and the economic policy preference means be worked out adequately. The resolutions of the party for the transformation of the production and foreign trade structure determine the main lines of economic polity. But we have not yet adequately analyzed how this economic policy can be coordinated with the information mediated by international prices for efficiency. It has not been clarified what kind of means we may and must use to realize preferential goals, how we can attain this without weakening instead of strengthening the realization of international competive prices in Hungary. (For example, do developments like the building up of the electronic industry require--and if so to what degree--exceptional treatment in our price policy?)

It was under such circumstances that the decision was made to take over the ratios of international competitive prices. In the weighing of this decision it was of basic importance that the Hungarian economy had a burning need for a price system which would rank the production branches, enterprises on the basis of an international standard which will give a more "forceful" incentive to energy and material savings, to technical development and to shaping of the structure according to efficiency standards. But this point of view puts the emphasis on identification with foreign trade prices and not on a search for differences. Hence the decision made in respect to the price system fits organically into that program which has the goal of rapidly increasing economic efficiency and of restoring as soon as possible the foreign trade equilibrium.

In every phase capable of independent trade, the international competitive price controls the efficiency of production. In an open economy the competition generally brings about the equilibrium between the export and the import price. Lacking the conditions of domestic competition, the new price formation order "guides" the prices according to central government intentions sometimes at the export and sometimes at the import level. It was necessary to choose this officially guided solution because otherwise there would have been no way to realize the foreign trade price ratios. On the other hand, the limitation on domestic price movements by the foreign trade price--according to the concept--is capable of releasing enormous energies which can give an important push to the gradual development of a positive market relation, which then creates more favorable external conditions for solving the rigidity of official guidance.

The fact that even without prior full assurance of external conditions economic policy undertook to adapt foreign trade prices shows the latent determination that the economy must develop under domestic price relations constantly better reflecting international competitive relations in such a way that the price system and economic development should raise the level of management by reinforcing each other.

It follows from all this that the establishment of the new price system cannot be regarded as a passing episode in the life of our economy. The managing and guiding organs both must count on the continuous realization of the consequences of adjusting to the ratios of international competitive prices; on the fact that it is not possible, either in areas affected by foreign trade or not, to avoid the economic pressures raised or mediated by new prices through "slackening" price or any other means.

It follows, of course, from the foregoing that with this year's price change the price system can in no way be regarded as developed and mature in respect to meeting the concept. In all certainty, it will still be necessary to correct certain rules of price formation. (The government has specially prescribed the correction of price-change errors in prices.) In final analysis, it will be the successful carrying out of the complex economic development program, including the perfection of the price system for the adaptation of the international competitive prices, that will create a solid base.

The Realization of International Competitive Prices

The taking over of international price ratios occurred differently in energetics, industrial raw materials and large volume semifinished products than in the products of the processing industry.

Energy and raw material prices were established generally on the basis of import prices in the nonruble trade relation. Domestic prices for certain products of a material type exported in large quantities were developed on the basis of prices achieved in export. With this, the system of "mixed price" used since 1959 came to an end. An understanding is expressed therein that a constantly increasing portion of the supplementary material sources consists of capitalist imports, and moreover that it is advisable in international economic competition to start the processing industry from a material basis identical with that of the competitors.

Since the price increases of 1980--and those of the preceding years--the prices of industrial basic materials and material-type industrial semifinished products are generally in harmony with foreign trade price ratios. We must solve gradually, but as soon as possible, the problem of building into the domestic price level of the enterprises cannot be higher than their export price level (calculated in forints) or that the profit level of commodity bases sold abroad--in their totality--cannot be higher than what the enterprises are gradually achieving in export.

The conversion of the processing industry to price ratios realized in export could not be realized at one stroke. In contrast with the price changes of earlier years, the goals of further development in the price system have not been published as simple guidelines, rather at the start it is already fixed in a definite program how--whosoever in his own area--domestic prices must be adjusted to prices achieved on the international markets.

In about 65 to 70 percent of industrial production adjusting to foreign trade prices, the price formation is realized chiefly in large producer enterprises. But it has not been possible to introduce this price formation at those industrial enterprises and cooperatives whose exports do not even reach 5 percent of domestic sales.

It was not possible directly to realize the determining role of world market prices in domestic ones, generally speaking either in agriculture or the food industry. In this area the international prices can be strongly manipulated, the domestic prices are supported by most of the countries, and thus competitiveness with the prices of world commerce would not have been realistic here either.

There is no possibility in services for conflict with international prices, or in the area of construction and delivery.

In food industry production and in the most important service branches, the ratio of official prices remains preponderant (70 to 80 percent). In these areas the official prices must make the managing organs feel the economic pressure on the whole economy. It must be noted that this cannot happen with the routine methods generally used in the past for official prices; their continuous maintenance must be carried out in harmony with the new requirements, intensely but flexibly adjusting to the changing circumstances.

Under the new price relations special care must be devoted to see that in these (noncompetitive) areas the "slacker" prices should not be allowed to develop which are being shaped in the area of competitive price formation (adjusting to foreign trade prices). Outside the price guidance realized through official prices, this must be attained above all by the methods of state market regulation.

When prices were changed we generally succeeded in creating appropriately profitable ratios which adjusted to foreign trade prices, and in other areas. According to measurements, starting profitability ratios evident in Table 1 were established in the individual branches.

Table 1

Profitability Ratios in the Branches for Starting Prices

(1 January 1980)

1. sz. táblázat

Az induló árak jövedelmezőségi arányai az ágazatokban
(1980. I. 1.)

1. Megnevezés	2 Nyereség az eszköz+bér százalékában
3 Energiatermelés, kohászat, vegyipar	10,0
Gépipar	9,0
Könnyűipar	8,5
Élelmiszeripar 6	6,0
7 Ipar összesen 8	9,0
Építőipar	9,0
Mező-, erdő- és vízgazdálkodás	6,0
Szállítás, hírközlés 10	9,0
11 Kereskedelem	9,5

KEY:
1. Designation
2. Profit in percentage of means plus wage
3. Energy production, metallurgy, chemical industry
4. Machine industry
5. Light industry
6. Food industry
7. Total industry

8. Construction industry
9. Pasture, forest and water management
10. Delivery and communications
11. Commerce

These starting profit levels are higher than what production, given its restrained rate of development, would compel for rapid modernization (for the elimination of nonprofitable processes or plant departments, for the better exploitation of means, and for material savings). However, the profit levels will be correctible with the study of prices in the first half year of 1980.

Although the branch profit ratios levelled strongly off, the profit ratios within the individual branches--as a consequence of adjustment to international competitive prices--had to be strongly differentiated in industry depending characteristically on the relation of foreign trade prices and expenditures, and in other branches on the spread in expenditures. It was still not possible to bring this about with price changes--particularly in the competitive areas of industry. Very many enterprises themselves, when the price changes occurred, levelled the prices of products which were differently competitive on the market, creating thereby a difficult situation for financing of their own future development decisions. It is an important task of state economic guidance to develop circumstances under which product prices would be differentiated according to the market competitiveness in the market competitiveness in the microsphere.

The Change in Energy and Material Prices

From the aspect of energy and industrial raw material management it can be expected that adjustment to international prices will promote the discovery of internal material reserves and the extension of material-saving technologies.

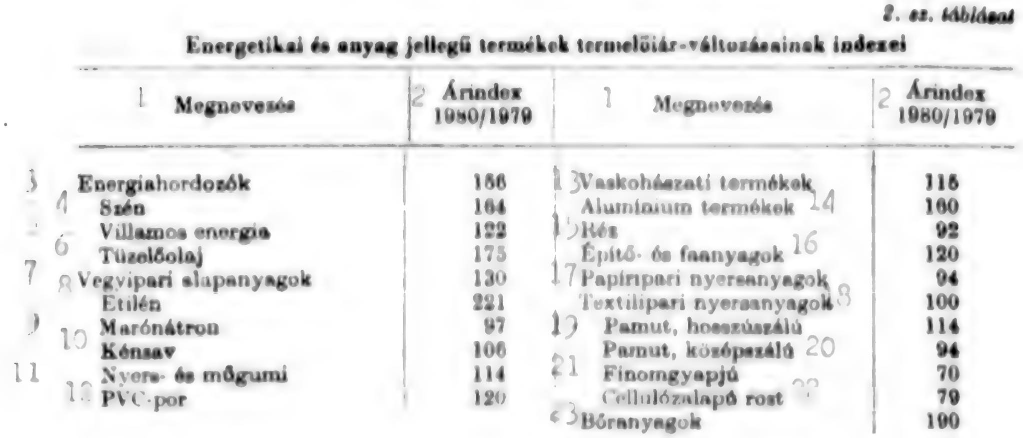
Energy and material prices again rose significantly in 1980. This means a further shift in the price ratios of materials and finished products. The price level of material-type industrial products rose by 30 percent, and of the processing industry on the other hand it declined by 10-12 percent: the relative ratio change was 46 percent in favor of material prices, including 75 percent in favor of energy.

A relative increase in material prices characterizes the development of our price system since 1975. Since 1973-1974 the level of material prices as compared to the prices of finished products has risen by 110 percent, and almost one-half of this increase occurred on 1 January 1980. Hence the change in the 1980 price ratios was greater than realized in any previous price change. That the price level of a great portion of the consumers is limited by international competitive prices has an incentive, in fact, a compelling effect on energy and material savings exceeding that of anything up to now in the guidance system.

The producer price changes of energetics and material-type products can be characterized by price indexes shown in Table 2.

Table 2

Indexes for Producer Price Changes of Energetics and Material-Type Products



2. sz. táblázat

Energetikai és anyag jellegű termékek termelőiár-változásainak indexei

1 Megnevezés	2 Árindex 1980/1979	1 Megnevezés	2 Árindex 1980/1979
3 **Energiahordozók**	156	13 Vaskohászati termékek	115
4 **Szén**	164	Alumínium termékek 14	160
Villamos energia	122	15 Réz	92
6 **Tüzelőolaj**	175	Építő- és faanyagok 16	120
7 8 **Vegyipari alapanyagok**	130	17 Papíripari nyersanyagok	94
Etilén	221	Textilipari nyersanyagok 18	100
9 10 **Marónátron**	97	19 Pamut, hosszúszálú	114
Kénsav	106	Pamut, középszálú 20	94
11 Nyers- és műgumi	114	21 Finomgyapjú	70
12 PVC-por	120	Cellulózalapú rost 22	79
		23 Bőranyagok	190

KEY:

1.	Designation	12.	PVC powder
2.	Price index	13.	Metallurgical products
3.	Energy sources	14.	Aluminum products
4.	Coal	15.	Copper
5.	Electric energy	16.	Building and wood materials
6.	Fuel oil	17	Paper industry raw materials
7.	Chemical industry basic materials	18.	Textile industry raw materials
8.	Ethylene	19.	Cotton, long fiber
9.	Caustic soda	20.	Cotton, medium fiber
10.	Sulphuric acid	21.	Fine wool
11.	Crude and synthetic rubber	22.	Cellulose-based fiber
		23.	Leather materials

Changes in price ratios have a great effect on changes in the competitiveness of certain processing-industry enterprises. Energy intensive products, aluminum processing and shoe industry enterprises, as a consequence of the rise in material prices, have entered on a much less favorable competitive situation while, for example, the market situation of textile clothing enterprises has relatively improved.

The level of material prices is a factor affecting the entire economic price level while the price of certain materials--given competitive price formation affects the profitability of the processing industries. Our interest is in the flexible movement of material prices since--given the internationally competitively limited domestic price--the mobile price creates a strong incentive to material savings and in acquisition timing to favorable prices. Thus the new price system gives incentive to a better exploitation of possibilities latent in technical and organizational as well as in commercial work.

A realistic competitive situation in the processing industry can be strengthened only with mobile material prices. In the price system of earlier years frequent opportunity existed for raising material prices, and still in the processing industry the conditions for adjusting to international prices did not improve. For example, the domestic price of textile industry raw materials was raised for the last time 4 years ago. Since then these prices have remained unchanged although two large price waves have passed through the world market. Thus material prices sometimes brought the textile industry into an excessively tense competitive situation and sometimes into an unjustifiably slack one.

A flexible change in the price of materials does not mean continuous mobility. It is true that statutory provisions for the price mechanism have made the fixing of material prices an enterprise task, with the exception of energy prices, but (for the sake of the relative stability necessary to organize economic work) the changes in domestic material prices were tied to lasting--forecast to last for at least a quarter of a year--movements of world market prices. (The enterprise price-differential reserve fund helps avoid unjustifiably frequent price movements.) In order to realize this guideline, the authorities obligated the enterprises to give prior reports on price increases in the more important materials. In reporting the price-increase intention, the central government can weigh whether the movement in material prices indicates a general inflationary increase in capitalist prices--which it is advisable to guard our economy against by rate-of-exchange measures--and whether it is dealing with a lasting or only a temporary change. The central organs are prepared to analyze comprehensively, at short intervals, the price changes taking place on the world market. By using their veto right they plan to hinder the spiralling in of only world market changes that are so temporary they are not even felt on the foreign markets for the products of the processing industry, and their adaptation at home is also unnecessary for influencing the material acquisition policy of the enterprises.

The Ratios of Resources

As prime-cost principle was forced into the background, the importance increased of evaluating energy sources. If the price is limited, it is decisive to know whether it is best to save with material, wages, or means, and what combination of energy source is required for the best solution.

The new price system affirmed the following ranking for the evaluation of resources: 1. material, 2. wage, and 3. means. The ratio of material costs increased by 22 percent as compared to the combined cost of means and wages. As a consequence of the producer and consumer price change (and the wage level increase linked to the latter) the ratio of wage costs within the prime cost increased by about 30 percent as compared to means costs. With the new prices, materials became a very expensive resource, and as such the importance of energy costs increased outstandingly in cost management. The limit for replacing material consumption with wage and means expenditures became lower, even as live work can be replaced more economically with means.

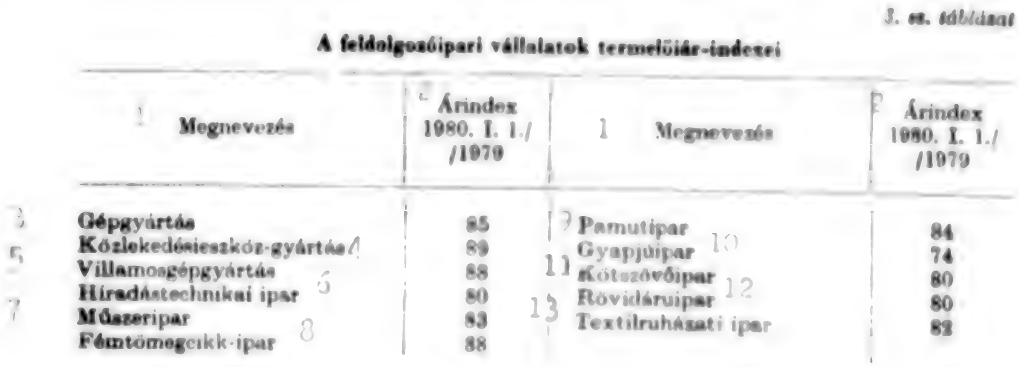
Nevertheless, we cannot be lavish with means either since the profit rate declined and its growth through price raises runs into much greater obstacles than before, and the financing of expenditures is possible only with efficient producer and/or commercial work.

Processing Industry Prices

The processing industry's price level has dropped particularly in the machine and textile industries. The decisive factor in the price level decline of the textile industry was that the material price level did not increase, and thus the decline in taxes calculated in production resulted in reduction of the price level. The price level of material used in the machine industry (particularly of imports) increased but this was amply countered by the decline in net income.

Table 3

Producer Price Indexes of Processing Industry Enterprises



3. sz. táblázat

A feldolgozóipari vállalatok termelőiár-indexei

1 Megnevezés	2 Árindex 1980. I. 1./ /1979	1 Megnevezés	2 Árindex 1980. I. 1./ /1979
3 **Gépgyártás**	85	9 Pamutipar	84
5 **Közlekedésieszköz-gyártás** 4	89	Gyapjúipar 10	74
Villamosgépgyártás 6	88	11 Kötszövőipar 12	80
7 **Híradástechnikai ipar**	80	13 Rövidáruipar	80
Műszeripar 8	83	Textilruházati ipar	82
Fémtömegcikk-ipar	88		

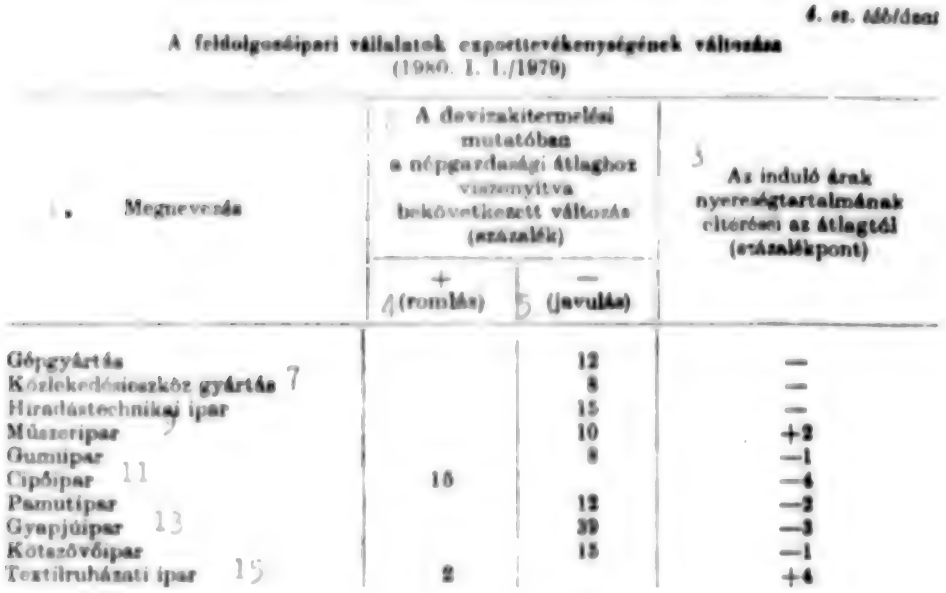
KEY:
1. Designation
2. Price index, 1 January 1979
3. Machine manufacture
4. Transportation means manufacture
5. Electrical machinery manufacture
6. Communications technology industry
7. Equipment industry
8. Metalware industry
9. Cotton industry
10. Wool industry
11. Knitwear industry
12. Dry goods industry
13. Textile clothing industry

The producer price level of processing-industry-type enterprises in the chemical, wood and building material lines and in leather do not show a similarly unified picture. In certain instances a decline of several percent is in evidence (for example, in the pharmaceutical, rubber, plastics processing and furniture industries), while in other cases there is an increase (for example, in the glass or household chemical industry). Because of the rise in raw material prices, the prices of the shoe industry, of the building-carpentering industrial products, and paints have risen considerably.

Generally, on the basis of the new prices, the export efficiency of the light and machine industry branches increased significantly. Changes compared to the average export efficiency of the economy--calculated at the 1978 export structure--were the following:

Table 4

Changes in the Export Activity of Processing Industry Enterprises (1 January 1980/1979)



4. sz. táblázat

A feldolgozóipari vállalatok exporttevékenységének változása
(1980. I. 1./1979)

1. Megnevezés	2 A devizakitermelési mutatóban a népgazdasági átlaghoz viszonyítva bekövetkezett változás (százalék)		3 Az induló árak nyereségtartalmának eltérései az átlagtól (százalékpont)
	+ 4 (romlás)	— 5 (javulás)	
Gépgyártás		12	—
Közlekedésieszköz gyártás 7		8	—
Híradástechnikai ipar		15	—
Műszeripar 9		10	+2
Gumiipar		8	—1
Cipőipar 11	15		—4
Pamutipar		12	—2
Gyapjúipar 13		39	—3
Kötszövőipar		15	—1
Textilruházati ipar 15	2		+4

KEY:
1. Designation
2. Change in the foreign exchange earning index as compared to the national average (in percent)
3. Deviation from the average in profit content of starting prices (Percentage points)
4. (deterioration)
5. (improvement)
6. Machine manufacture
7. Transportation means manufacture

8. Communications technology industry
9. Equipment industry
10. Rubber industry
11. Shoe industry
12. Cotton industry
13. Wool industry
14. Knitwear industry
15. Textile clothing industry

As is evident, the "cost" of improvement in certain industrial branches was low profit, while the "deterioration" in the position of the textile clothing industry, for example, derived from greater profit. According to the approved program, the deviation from average will be expressed by 1985 generally in a profit spread.

The most troubling problem in the new price system is to what degree of effectiveness can the price formation adjusting to processing industry foreign trade prices be made to function. According to the published rules, the price-guidance in the processing industry will occur in an autonomous way. With this we are given to understand that 1. the processing industry's price level is no longer an automatic function of the development of material prices, and moreover 2. the guidance will be conducted by the enterprises themselves on basis of their own foreign trade price positions. We had to choose this method because the price movement of finished products on the external markets is much more balanced than that of materials, and only the limitation on finished product prices can create the harmony between acquisition-reproduction-marketing which disintegrated in Hungary more than a decade ago and is still missing despite efforts made since 1968.

According to statutory provisions, the processing industry enterprises organize their price policy on basis of the following criteria:

1. The center of the domestic prices is the price calculated by export profit. The price center can be understood as the average (for example, for a year or for a longer period in the case of a longer running-through time) for an extended period of time; the specific time period is set in the enterprise's own price-formation rules;

2. It is possible to deviate from the price center on the basis of market relations when the price for certain products and selections is being developed. The law limits an upward deviation to the extent that it forbids a higher price than for a product deriving from corresponding capitalist export (in the case of use-value deviation, higher than the price proportional to taking this into account). (A price higher than this is classified as unfair (tisztessegtelen).

3. The composite price level of products marketed domestically by an enterprise can be raised only proportionally with the price level of its export products, and in case of its decline, it must reduce the whole price level. (The price level increase, of course, is only a possibility,

realization of which must still be contended in domestic price negotiations; the price decline, on the other hand, is obligatory.) The price formation of individual products under points 1 and 2 can be realized only under rules of export price-level control.

4. An enterprise which supplies a significant volume of materials regularly to an exporting enterprise--if it is not otherwise required to adjust its prices to foreign trade prices--may share in the exporter's profit. Thus it is the exporters who "guide" the price formation of the material suppliers. If this is not satisfactory to the latter (because it can export more effectively, for example) it may develop a more favorable center of domestic price formation with export and conduct price negotiations with the consumer on this basis.

In relation with these rules, a number of basic questions present themselves:

--Will the above-described price formation principles make possible the continuous maintenance of internal price ratios which are in harmony with domestic supply and demand relations?

Practice will give the final answer. From the price-policy point of view the important thing is how the law classified price proportionality, what possibility there is for the development of consistent price ratios--and what organ has the responsibility for determining the proportions--if various enterprises manufacture the same or related (replaceable) products, but not all of them engage in export, or they do not make out with uniform success on the export markets. On basis of the present rules, the following picture can be given:

In areas under competitive price formation, guidance for price proportionality is given by the enterprise obligated to such competition. The prices of other enterprises and cooperatives compared to prices of an enterprise coming under competitive price formation--naturally taking into account the differences in use value--cannot be disproportionately high.

If two or more enterprises obligated to competitive price formation manufacture the same or similar--that is, replaceable--products, the enterprise which has the most favorable stance on the foreign market can also realize higher domestic prices than its domestic competitors. The latter (hence the enterprises which gain less favorable export prices) may raise the prices of certain products--because of the export price level limitation--only to the level realized by the producer attaining the better export prices if sense dictates that the prices should be reduced for some of their articles. For those in the more favorable position, however, the higher export price cannot always be realized. For example, if the product cannot be sold at the export price level or in adequate volume (for example, because the product of another enterprise is less expensive), then prices are made proportional to the lower price.

If market competition is lacking, it may certainly happen that adjustment to the export prices in a given product category or enterprise will result in a low domestic price level not in proportion with demand. A one-sided exploitation of the shortage situation and an increase in prices under this guise do not belong under competitive price formation, and it is not permitted in other areas either, such a price is unfair.

Products which belong in typically commercial trade (consumer items, for example) can be made proportionaly by commerce. Disproportionately high prices cannot be realized by commerce either, but it can sensibly moderate the rigidity of officially guided competitive price formation.

Will the modernization of production for domestic purposes be forced into the background because the price and profit level of domestic production depends only on their presence on export markets?

This was a question frequently raised during the preparation of the price change. The dual control system of competitive price formation is meant first of all to prevent neglect in modernization of domestic price formation. Accordingly, the domestic price must proceed at the time of its formation from profit attained in export, but the increase in export profit is justified for raising the prices of products designed for the domestic market only when and to the degree that the export price has increased. Thus if the source of a greater export profit is a reduction in prime cost but if the enterprise did not reduce its prime costs for domestic products to the same degree as for exports, then for such commodity basis it must be satisfied with a profit smaller than the one gained in export.

--Will the improvement of export efficiency lead to a decline in export volume or to a limit on volume growth because, for example, we will eliminate our less efficient exports, which nonetheless help improve the payments balance?

In answering this question, we must first establish that the incentive to export growth cannot be expected from price formation alone. In fact, export growth is not merely a matter of incentive. In 1978, for example, we were able to achieve greater profits in capitalist export than in other marketing relations, but still our exports did not increase satisfactorily.

Export direction and volume growth depends on the entire planning-guiding system. The question can be put this way: does the price thwart the efforts of the system at increasing capitalist export?

A more favorable export price position (an increase in export profit or prices) must in itself make it more favorable for the enterprise to expand exports as well.

On the other hand, of course, the enterprises obviously cannot be restricted in abandoning their nonprofitable exports. If this is accompanied by an increase in more profitable exports or by decline imports exceeding the eliminated exports, this will also increase production volume and be advantageous also from the viewpoint of the foreign trade balance. A problem may rise only if the export is restricted to the achievement of a more favorable domestic price. In knowledge of all the factors affecting the enterprises, it may be assumed that this will rarely happen. But it is an important task of the price policy to watch closely from the beginning whether such a negative phenomenon, or some other, might appear in response to the effect of competitive price formation, and if necessary issue appropriately tight rules. Published orders establish the possibility to do this.

--Does the new price formation system endanger the stability of industrial items, will it be accompanied by price fluctuations extending to the entire economy? Will planning work in this way become excessively uncertain?

Harmony with the movement of foreign market prices can be realized in many ways. As I have said, the central guidelines require the levels to be identical for a year or more. This can be realized 1. with permanently stable prices if the foreign trade price is changing in a ± direction; 2. with mildly and gradually rising or falling prices if such a trend is being realized permanently in foreign trade prices; 3. with more frequent price changes if the price trend on foreign markets is uncertain and the enterprise does not think that it can assure, without following the specific changes, the maintenance of the price level prescription.

The enterprise itself must decide which solution it will use. In knowledge of the foreign market price movement for its won products, it needs only to announce in its price formation regulations for how long a period it considers the price positions valid.

The contractual system also helps in finding our way in this question. On basis of the price provisions in foreign trade agreements, the possibilities of domestic price formation can also be discovered: enterprise planning may take place on this basis. After the carrying out of a given large action (investment, cooperation) it can be seen whether the situation of the enterprise has improved or worsened as measured by international standards. This can give a more solid basis of planning than afforded by the excessively autarkic processing industry prices than was earlier the case.

Presumably, the prices of industrial items will move more frequently, perhaps to a greater extent than before. As a consequence of the normalization of the financial system, the price movements will also be felt in consumer prices. The economic plans are counting on this circumstance. The central organs estimate that the upward influence of the price changes on the consumer price level will not be greater than realized in the years prior to 1979. The outflow of revenues will be harmonized with the change in the price level. In this the ± price movements must be taken into account with the planning of the commodity base which on the domestic markets, too, will make it necessary to adjust more rapidly to demand.

In way of the price change, purchasing prices in agriculture increased by more than 10 percent, including a 7 percent rise for plant products and a 13 percent rise for products of animal origin. It was decisively this--and the elimination of subsidies formerly included in calculating material prices, which caused an 11 percent increase in the producer price level for foods.

In calculating the agricultural price level, we weighed the domestic and foreign expenditure relations, the world market prices, the increase in the importance of the land tax, and the reproduction costs of industrial and agricultural live work. Among these, a number of questions have not yet been adequately clarified by socialist price theory. Thus finally we emphasized the practical point of veiw that the self-financing capability of agriculture can be established only in part because of the limits set by domestic consumption and foreign trade prices.

Parallel with the increase in the purchasing price level, the state support for operations in agriculture declined by about 70 percent, and at the same time cost elements identical with industry's were built into agricultural expenditures (the SZTK [Trade Union Social Insurance Center] contribution increased, amortization rose, and so forth). The price ratios approached the development of domestic expenditures, although the profitability of animal-origin and plant products still was not evened out. A great change in the price ratio is also limited by the fact that in international comparison the production level and efficiency of large-scale livestock breeding is behind that of plant production. Thus livestock breeding prices also signify the requirement to increase yields or to reduce costs.

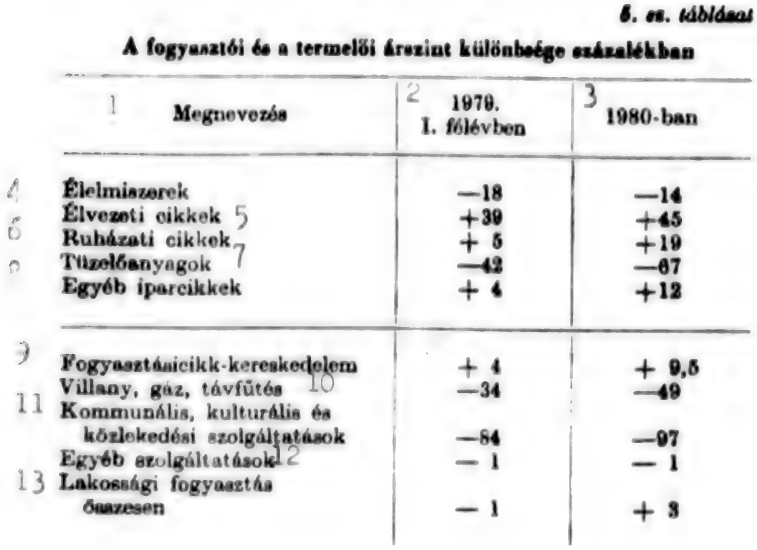
Consumer Prices, Two Levels

Among the long-term goals of price policy is to establish the value proportionality of consumer prices. (By this we mean the harmony in the ratio of consumer and producer prices and the steady movement together of these prices.) It was not possible to achieve this with the present price change. We were only able to take a long step in this direction. The establishment of value proportionality was limited by the fact the producer prices grew where significant state consumer price supports up to now as well have broken down the unity of the producer and consumer price.

It was among the goals of the price change to establish a natural two-level price system. (By this we mean that a sales-tax zone of perceptible magnitude should separate the consumer prices.)

Table 5

Percentage Difference in the Consumer and Producer Price Level



5. sz. táblázat

A fogyasztói és a termelői árszint különbsége százalékban

1 Megnevezés	2 1979. I. félévben	3 1980-ban
4 Élelmiszerek	—18	—14
Élvezeti cikkek 5	+39	+45
6 Ruházati cikkek 7	+ 5	+19
8 Tüzelőanyagok	—42	—67
Egyéb iparcikkek	+ 4	+12
9 Fogyasztásicikk-kereskedelem	+ 4	+ 9,5
Villany, gáz, távfűtés 10	—34	—49
11 Kommunális, kulturális és közlekedési szolgáltatások	—84	—97
Egyéb szolgáltatások 12	— 1	— 1
13 Lakossági fogyasztás összesen	— 1	+ 3

KEY:		
1. Designation	8.	Other industrial items
2. first half year	9.	Consumer item trade
3. in 1980	10.	Electricity, gas, district heating
4. Foods	11.	Communal, cultural and transportation services
5. Luxury items	12.	Other services
6. Clothing items	13.	Total population consumption
7. Fuels		

The development of consumer and producer prices in the new price system took place in two large steps: on 23 July 1979 and on 1 January 1980.

With the new prices, the positive two-level nature of the price system was restored. In large areas, a unified sales-tax index is realized in the consumer price of industrial items. The basic foods and services are still supported to be sure (in fact, the support of basic services has even increased), but the great part of the personal and repair services no longer need to be subsidized.

One of the long-term goals of the price system is further to improve the proportionality of consumer prices. But for the next few years we can set our goals, above all, for keeping the proportionality established for 1980 and eliminating certain minor domestic asymmetries. In addition to producer prices that follow changes in international prices, this requires a greater movement than heretofore in consumer prices. Naturally, the movement of consumer prices will continue to be realized with prior control and in coordination with living standards policy. Price policy will promote this with the means of price planning, price guidance, and price control, and with the development of the price information system.

6691
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DEPUTY MINISTER INTERVIEWED ON BUDAPEST HOUSING SITUATION

Budapest NEPSZABADSAG in Hungarian 14 Feb 80 p 3

[Interview with Lajos Szilagyi, Deputy Minister of Construction and Urban Development by Kornelia Dorecsko: "Change of Pace in Budapest's Apartment Construction," date and place not given]

[Text] Apartment construction in our country has been one of the most important parts of improving living standards since the liberation. Attention is constantly given to the work of the construction industry, and there is hardly any other industrial branch which is being looked upon by the population with such a critical eye as this one. This is understandable, especially in Budapest where, in spite of mass construction of apartments, is not decreasing. In the present 6-year plan alone, 86-87,000 apartments will be built in the capital city, which, for example, is equal to the total number of apartments in two county seats of Miskolc and Eger. We discussed with Lajor Szilagyi, deputy minister of construction and urban development, the situation in apartment construction in Budapest, last year's results and the implementation of the capital city's plans.

[Question] One of the largest investments of the country is Budapest's apartment construction; the government is spending more than 10 billion forints annually for this purpose. Accordingly, the party and government leadership is carefully watching apartment construction in the capital city; it has been put on the governmental agenda twice in recent years. What has the government decides?

[Answer] The Fifth Five-Year Plan, started with a huge lag in site preparation, and this made the work extremely difficult. Budapest's construction industry was not prepared enough for the implementation of the larger-than-ever tasks specified by the plan either. It is symptomatic, for example, that 2,200 finish workers have left the trade and service industry. Thus both the State Construction Enterprise No. 43 and the Budapest Apartment Construction Enterprise had acute manpower shortages. Under these circumstances, the government set as basic goals the improvement of rough construction and construction organization.

Decisive Measures

[Question] What measures were taken after the government's resolutions?

[Answer] Both the Ministry of Construction and Urban Development and the Capital City Council "straightened their ranks." A department of coordination was created in the ministry which manages and coordinates the work of the implementing organizations, and helps and prepares the investments. In the city council, the tasks were divided: a deptuy director was made responsible for directing the tasks in apartment construction. A main department of investment was established, whose main task is to make preparations for and coordinate apartment construction. As a result of all this, a collective has been established which, led by common intentions, is working, on the basis of a coordinated program to implement the 5-year plan of the capital city's apartment construction. We still have, of course, a great deal to do, which requires a tremendous effort.

[Question] What are you primarily thinking of?

[Answer] I will begin at home. We must overhaul the apartment construction enterprises of Budapest. We must establish a balance between prefabricated panel production, installations and finishing work. Enterprise no. 43 cannot at present independently assemble and finish with tradesmen those houses, for which it is manufacturing the panels. There is still a shortage of manpower in the capital city's construction industry, although the average wages are almost the highest here. We have analyzed the causes of labor turnover. We have established that the main problem is not be be found in wages; however, social benefits can be improved and work organization leaves things to be desired. Another important requirements is the improvement of site preparation in the capital city. Apartment construction will only become continuous and according to plan if the contractors can take over the construction sites in time, according to the orders of the council of ministers. This will be achieved by 1982.

The Entire Country is Helping

[Question] What do you call an ideal situation?

[Answer] It is when the construction site is cleared and the investment program is ready at least a year before the public utilities are installed and when the implementation plan is ready at least six months before the beginning of high rise construction. Still today the implementation plans are still often made simultaneously with the beginning of the construction. Unfortunately, it still happens often at the Budapest apartment complexes that the investment program and the implementation plan are being prepared simultaneously.

[Question] Yet we have received news during the last weeks that 1979 was an exceptional year for apartment construction in Budapest. How should we understand this?

[Answer] It is a fact that, as a result of our measures, the united and improving work has already manifested itself last year. It was in 1979 when we succeeded for the first time to build 17,861 state apartments instead of the 12,000 planned. In all 18,016 apartments were built, 5,155 of these were built by private sources. And I add right away that we have begun to make up for back-logs accumulated in recent years in related projects as well. The annual plan was fulfilled in the building of school rooms, kindergartens, day-care centers and health network. And something else, too. It was last year that we were able to say for the first time that we began the year with 3,400 apartments at some level of readiness. This means that the finishing of apartments will be more continuous this year. We do not have the problem anymore that wall paper hangers are still and floor finishers are still working in February in apartments that should have been finished in December...

[Question] What you have said so far, indicates that there has been a change of pace in Budapest's apartment construction. Is this also connected with the fact that provincial enterprises are also working on Budapest's constructions?

[Answer] Long debates preceded the inclusion of megye enterprises in Budapest's apartment construction. It finally became clear that Budapest must be built by the whole country. Without the efficient help of the megye enterprises, these results would have been impossible. Fourteen county construction enterprises took part in the realization of Budapest's program. Those from Gyor have finished 240 apartments in District 22, in the apartment complex of Rozsakert [Rose Garden] but will build 1,068. The Veszprem Megry State Construction Enterprise is building in Bekasmegyer. Those from Bekes, Fejer, Hajdu-Bihar, Heves, Szolnok and Vas counties are building in Kispest, and those from Borsod, Bacs, Zala and Komarom counties and the Southern Hungarian Construction Enterprise are building in Csepel. They built a total of 2,432 apartments last year, and let me add right away, they did a quality job.

[Question] Does this mean that the lists of flaws have become shorter?

[Answer] The megye enterprises from Hajdu-Biahr, Fejer, Gyor and others finished the apartments without a list of mistakes. The presence of the megye enterprises initiated a healthy competition among the enterprises. They were, and are, honor bound to comply with their obligations on time, without mistakes. They have shown in the capital city that it is possible to do aesthetic and quality work with the same prefabricated components of the State Construction Enterprise no. 43 which were used earlier to build apartments with long lists of deficiencies and mistakes that were the cause of many, many complaints. Those from Debrecen, for example, repaired the minor damages that are unavoidable in transport before the crane put the panels into place. The departing workers, the bricklayers, plumbers and electricians cleaned the working area after each phase of work. There was cleanliness and order and thus it was possible to do quality work. I think it is possible to set not only a bad but also a good example. The same way as the megye enterprises have also shown how it is possible to cooperate and mutually help each other in the rapid execution of tasks.

To Plan More Realistically

[Question] Initially you mentioned that the construction industry was not ready for the tasks. What has been changed in this area?

[Answer] In the last years several 100 million forints were invested in Budapest in underground construction. As a result of this, the construction of the basic public utilities in the apartment complexes became more rapid just like the problem of building the receiving level of panel buildings were solved. The proliferation of frame prefabriacted panel technology resulted in a change in the building of related projects. This was a significant investment by the Concrete and Ferro-Concrete Works. The light-structure Clasp method became widely accepted and used. All of these made it possible to catch up in the construction of public buildings and stores with the house construction technology. Manual methods have been replaced by large scale industrial ones. Implementation became faster. This is why we were able to make up for the back-logs that accumulated over several 5-year plans in the construction of schools, kindergartens and the store network. I would also emphasize that we have selected a special company, the State Construction Enterprise no 23, to build the public projects.

[Question] Are there any delays, for example, in the construction of multi-level private condominiums?

[Answer] Yes, it is a fact that 20-22,000 such apartments were planned in the capital city during the present plan period, and probably only 13,000 of these will be finished. But we must clearly state that the plan was unrealistic. There was neither enough area for the construction of so many apartments nor an appropriate investment organization, not to speak of the implementation capacity. In this 5-year plan, the construction cooperatives pledged more than they can handle, and thus they will build only 6,300 apartments instead of 10,000. All of this indicates that during the years to come, in working out the Sixth Five-Year Plan, we must reckon with the possibilities more realistically and carefully. Our idea is to implement the construction of private condominiums and the workers' apartments in the next plan period by having the councils make the preparations and the state construction enterprises do the building.

[Question] How do you appraise the implementation of the Fifth Five-Year Plan?

[Answer] I am confident that, in spite of all the problems, we will be able to construct 86-87,000 apartments in the capital city by the end of the year. True, this requires tremendous efforts, if you like, I could also say that we pay a high price for it, but it is a fact that this means over 10,000 additional apartments than were built during the preceding 5-year plan. We can say that the dynamic work-competition, which was started for the 35th anniversary of the liberation and for the 12th Congress of the MSZMP also plays a big role in reaching the objectives.

9414
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HUNGARY

RAPID, TROUBLED DEVELOPMENT OF CHEMICAL INDUSTRY ANALYZED

Budapest FIGYELO in Hungarian 13 Feb 80 p 7

[Article by Dr Erzsebet Nagy: "Rapid Development--With Troubles]

[Text] In the elapsed period of the Fifth Five-Year Plan, production of the chemical industry has grown on the average by 8.2 percent, that is, substantially more rapidly than the production of socialist industry. The production increase was not an even one over the individual years: in 1976 and 1978 the development was more rapid than average, while in 1977 and 1979 it was more moderate. The rate of development by the chemical industry was also different by branches. The organic and inorganic chemical industry developed more rapidly than average, while the petroleum refining industry developed more slowly.

Structural Changes in the Pharmaceutical Industry

The results achieved between 1976 and 1979 were based primarily on new investments and capacity expansion, and on investments that were in operation earlier but engaged in planned production only during the present plan period. At the same time, a role was played in shortfalls of annual production plans by investment delays, material and manpower shortages, an uneven rate of cooperation deliveries, and in some cases the low technical level of the technologies used.

In cheemical industry production there also is a mid-year fluctuation in achievement, and year-end haste.

There is even clearer evidence of irregular production in the small units (branches, enterprises) and in monthly observations. Production fluctuations have also been significantly contributed to by the deadlines for finishing operational plan measurements and financial accounting. The differentiated development of individual chemical industry branches is also indicated by the fact that until 1978, production in the pharmaceutical industry developed rapidly, whereas the rate of growth slowed down in 1979 because of influences that restrained production. Material shortages made their effects felt particularly in the first half of 1979 and caused important production lags.

Occasional disruptions in domestic pharmaceutica supplies was also related partly thereto.

As in countries with developed pharmaceutical industries, important structural changes have been carried out also in Hungary. Traditional pharmaceutical products have declined, and the ratio of products which supplement the basic production profiles increased--human and animal nutriments, animal health preparations, and plant protection agents. The ratio increas in packaged preparations represents an important efficiency reserve in the branch. In addition, important development possibilities are latent in the production of new kinds of medicine (for example, Cavinton) appearing as a result of license and know-how contracts or domestic scientific research. It points to the structural development of the pharmaceutical industry that the number of new products came to 67 in 1977 and 64 in 1978.

Selection and Demand

The backbone to chemical industry production was given by the rapid development of the organic and inorganic branch. It was in this branch that the bulk of special chemical industry investments were realized. As of 1975, the following facilities were built: the PVC factory of the Borsod Chemical Combine, the fertilizer factory of the Pet Nitrogen Works, the polyacrylnitrile plant of the Hungarian Viscosa factory.

One of the most important products of the chemical industry is fertilizers. In 1979 it manufactured (in active ingredients) 549,000 tons of nitrogen fertilizers, 164,800 tons of phosphorous fertilizers, and 321,400 tons of compound fertilizers.

The development was not adequate from all points of view: 70 percent of the manufacture of separate nitrogen fertilizers consisted of less modern fertilizers with low active ingredients (for example, ammonium nitrate and calcium ammonium nitrate). And thus the use of the productive capacity also developed unfavorably. In 1976, the production of separate nitrogen fertilizers increased by 17 percent, but in 1978 only by 3.8 percent, and in 1979 by 2.9 percent. The 1 January 1977 price change (a 3 percent price increase) was realistic in respect to the cost factors of fertilizer production, but it brought a further worsening in the harmony between agricultural demand and industrial supply. (Various central measures were taken for the reduction of tensions: the liquidation of calcium ammonium nitrate supplies with reduced value, the support of purchase by agricultural plants, the granting of price subsidies for fertilizer types with an active ingredient content deviating from the standard, and in physical state fertilizer types, etc).

The manufacture of phosphorous fertilizer also requires imported basic materials and therefore since 1976 the foreign economic difficulties--the narrowing of raw phosphate stores, the price increases and the delivery difficulties--have become the determining factors of production. In 1979. production declined by 10.9 percent partly because of the phosphate and partly because of the sulphuric acid shortage. In the above-mentioned years, the demand for phosphorous fertilizer in various agricultural and perhaps other selections could be met only by significant imports from the Soviet Union and Yugoslavia.

The main trends of structural development in recent years are represented by compound fertilizer types with twofold, threefold trace elements, etc--which can be better adjusted to soil conditions. In 1972 they put the dual nitrogen factory into operation at the Pet Nitrogen Works, and in 1975 the so-called large capacity complex fertilizers with various active ingredients came to 28.7 percent, and by 1979 this rose to 35 percent.

The use of checmical plant protection agents is constantly widening in our agriculture. But our plant protection agents are only partly capable of meeting increasing demand. Production fluctuates: in 1976, the enterprises manufactured 21 percent more than in the previous years; in 1977, 4 percent less, and in 1979 2.7 percent more. In 1979, annual production was 23,100 tons of active ingredietns, and in the form of compositions 54,700 tons. The domestic manufacture of active ingredients is also developing, but within basic material utilization for packaging (the so-called formulation) the ratio of imports is still high, and in fact we even need to import prepared plant insecticides. We market new products manufactured as a result of developing domestic research activity (for example, Synpran, Buvonol herbicides) partly in the Soviet Union on the basis of an agrochemical agreement. The structure of our plant protection insecticides follow the international trend, which is characterized by the ratio growth of herbicides: their share in plant protection agents was 43.6 percent in 1975, and 60.7 percent in 1978.

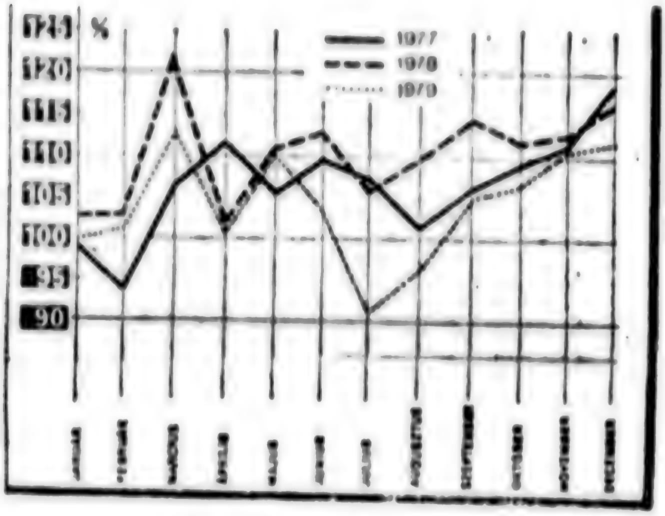
For the Improvement of Proportionality

Plastics have an important role in supplies furnished by chemical products. Hungary holds a modest place in per capita plastic production although in 1976 we produced a total of 294,000 tons. This represents a 30-fold development as compared to 1960 and a 5-fold development as compared to 1970. With the beginning in 1980 of a 150,000 ton PVC capacity, the volume of available plastics increased outstandingly. The basic material production which increased by leaps and bounds exceeded the capacity of the processing industry, and therefore we are exporting a part of the PVC.

The volume and selection of plastic production increased with the arrival of polypropylene. The manufacture of this product was built on propylene, one of the basic materials of the Olefin Works, put into operation in 1975. The putting into operation of an almost 200,000 capacity also evoked a change in the internal structure of plastics. The ratio (65 percent in 1975 and 82 percent in 1975) of modern polymerization plastics which could be used in broader scope increased.

The Gross Index of the Chemical Industry, Monthly Breakdown

(Monthly average of the preceding year--100)



The putting into operation of a new plant division at Nyergesujfalu increased the production of chemical fibers. The production of polyacrylnitrile fiber increased by 6,000 tons, almost doubled. The total volume of chemical fiber production amounted to 27,300 tons in 1979, 7,200 tons more than in 1975, but because of a material shortage 1,000 tons less than in the preceding year. Our chemical fiber production makes up about one-third of the consumption of the domestic textile industry. But the production volume and selection is not adequate because the light industry requires a broader selection and more synthesis.

Domestic production is sufficiencly homogenous, a total of four different kinds of fibers are produced: 18,700 tons of synthetic-based fibers and 8,600 tons of natural-based fibers (cellulose). Sixty-five percent of the synthetic-based fiber is made up of polyacrylnitrile, 31 percent of polyamid, and 4 percent of polypropylene-based fibers. In order to expand selection, the polyacrylnitrile fibers which exceed demand is being replaced by polyester fibers on basis of the Hungarian-Polish chemical fiber agreement.

The development of the plastics production and processing industries has not been in harmony. The efficiency of the national economy, on the other hand, calls for a more vigorous and radical development of plastics processing. While plastics production between 1976-1979 increased on an average by 24.2 percent, the plastics processing industry increased its production by only 7.4 percent.

The rubber industry between 1976 and 1979 increased its production by 5.7 percent on a yearly average, but the development did not proceed evenly.

Despite the varying rate of production, the volume and ratio of export grew gradually. In 1975, 28 percent of the total sales were in foreign countries, and in 1979 on the other hand 39 percent. The transformation of the product structure contributed not only to an increase in exports but also to an increase in the ratio of economical products. As the first step--following license purchase and then the finishing of the investment--we started in 1975 the manufacture of modern steel-radial tires for trucks and passenger cars competitive on the world market, the ratio of which increased to 30 percent by 1979. In 1978, 10 percent of the truck and passenger car tires were sold on ruble and 18 percent on nonruble markets. When in 1979 we started the manufacture of radial-type agricultural machinery tires with a capacity of 170,000 units per year, it made possible a further increase in exports.

In 1978 we sold abroad more than 80 percent of the metal-reinforced rubber inner tubes, as well as inflatable rubber and spring mattresses. Foreign interest in these two products slackened considerably in 1979.

Active Foreign Trade

Total sales of chemical inudstry products between 1976 and 1979--following the production rate of growth--increased annually on an average by 18.5 percent. The annual growth fluctuation was similar to production developments.

In order gradually to improve the balance situation of the economy, the chemical industry increased the volume of foreign trade marketing by 18.6 percent on an average in the past 4 years of the Fifth Five-Year Plan, and well exceeded the rate of export development in socialist industry. In 1978, however, the usual annual rate of increase lagged, and foreign sales increased by only 2.5 percent.

Twenty-two percent of the total products sold by the chemical industry are marketed abroad. The ratio of the pharmaceutical industry in the chemical industry's export is 46.4 percent. Thirty-one point eight percent of the chemical industry's marketing in organic and inorganic goods is for export, and 9.7 percent each of the oil refinery industry and of the rubber industry.

The development of sales in the chemical industry is basically related to the modernity of the products. Herewith we shall approach the concept of "modernity" by giving an age distribution for the products.

In the 1978 sales of the chemical industry's markets, the ratio of new products was 1.9 percent. Eight point nine percent of the products sold were initiated within the past 3 years while 35.7 percent has been produced at least since the past 8 years. Manufacture of 45.2 percent of the products began between 1961 and 1970, while 19.1 percent was manufactured before 1960.

In the chemical industry branches, almost half of the total sales by the plastics processing and the pharmaceutical industries were manufactured at the most within the past 8 years, and 42 percent of the chemical industry products sold in organic and inorganic goods was not more than 8 years old, and in the rubber industry 44 percent. Eighty-two percent of the products in the oil refining industry have been manufactured since 1970.

Distribution of 1978 Foreign Sales

According to Age of the Manufactured Product (in percent)

Year put in production	Total chem. industry	Organic, inorganic	Petro refining	Of this: Pharmaceuticals	Rubber Industry	Plastics Processing
Before 1970	55.7	48.7	47.3	68.4	23.0	59.5
1971-1975	34.5	47.8	35.2	27.0	30.0	20.2
1976-1978	9.8	3.5	17.5	4.6	47.0	20.3
Total foreign sales trade	100.0	100.0	100.0	100.0	100.0	100.00

We began in 1976 to manufacture 9.8 percent of the chemical industry's products sold in foreign trade. Forty-four point three percent of the sales may be called products no more than 8 years old, and thus for the most part we are sending abroad the more recent and relatively more modern categories of products.

The age composition of exports by the pharmaceutical industry may be called contradictory: the ratio of products whose manufacture we began before 1970 exceeds two-thirds of the export. In our judgment the reason for this is that pharmaceutical exports include a significant ratio of products which may now be regarded as traditional and is produced in large volumes (for example, papaverin, chlorocide, B 12 vitamin, and so forth). At the same time, the introduction of new products requires longer foreign market work, and the foreign trade sales are realized only later.

In 1978, the chemical industry's share in industrial production value amounted to 15.5 percent, in net income 19.2 percent, and in the net budgetary payments of the enterprises 20.1 percent. Total net budgetary payments rose 1.7 times between 1976 and 1978. With this at the same time, a profit was formed that was only 1.2 times greater, and the growth in net income 1.1. Profits in 1978 amounted to 14 billion forints, while the balance of budgetary withdrawals and supports amounted to 13.2 billions. In 1976, the profits came to 47 percent of net income, while this was 51 percent in 1978.

Favorable Profitability Indexes

In the chemical industry the profitability indexes for capital and wage ratios exceed the industrial average in every case. Net income for every 100 forints of expenditures is 2.7 times more generally in the chemical industry than in industry as a whole. A role is played in this by the fact that the chemical industry is relatively less labor intensive.

The More Important Profitability Indexes, Calculated for 100 Forints

	Capital Use		Profit on wages in fts		On energy*	
Year	Chem. industry	Industry	Chem. industry	Industry	Chem. industry	Industry
1976	12.74	10.44	253.43	103.63	72.64	39.99
1977	13.71	11.47	267.77	112.34	77.55	45.60
1978	13.04	10.33	264.12	102.92	74.93	41.22

* 0.1 x used capital value, ± 1.5 x total paid wages.

In 1976 the profitability indexes of the chemical industry were 1.7-2.0 times greater than for industry as a whole. In the period under study, only the industry manufacturing transportation means and the equipment industry approached the chemical industry's outstandingly high profitability level.

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HUNGARY

DEVELOPMENT PLANS OF AGRICULTURAL ENTERPRISES SURVEYED

Budapest FIGYELO in Hungarian 13 Feb 80 p 13

[Article by Dr Istvan Kapronczai and Dr Laszlo Szenay: "The Conditions and Limits of Production Increase"]

[Text] Planning work on the Sixth Five-Year Plan period is proceeding apace. At such points of time it is particularly advisable to analyze the development experiences of the previous medium-term plan period. The Cooperative Research Institute has studied a number of characteristic features of development efforts and problems at 60 agricultural producer cooperatives. (The farms chosen for the study included 20 weak, 20 average and 20 good producer cooperatives.)

Of the 60 producer cooperatives queried, 29 are planning production expansion exceeding 20 percent for 1980, 13 are planning between 15 and 20 percent, 10 are planning between 10 and 15 percent, and 8 are planning a cutback of 10 percent.

Outside "Expectations"

It appeared from the replies that among the average and the weak producer cooperatives as well some planning production expansion occurred which was considerably greater than the sector average. Nevertheless, it is a fact that primarily the good farms were planning expansion above 20 percent.

But the planned increase in production was still based frequently on the old outlook that a good farm is one that is always developing dynamically, and the good manager is one who carries out large development.

In many places, however, the actual resources, the available economic and intellectual capacities put a question mark on the planned rate of growth.

More than one-half of the queried producer cooperatives (34 farms) added that they kept the prescribed rate in harmony with the natural, operational and economic features. But the number of such responses declined in going from the "good" farms to the "weaker" ones.

Somewhat more than 40 percent of the farms (26 cooperatives) believed that the production rate of growth was strained or was too slow as compared to endowments and possibilities. The latter was characteristic chiefly of the weaker farms.

A strained rate of production expansion as compared to endowments caused problems on various farms. In response to the question of what had justified prescribing such production expansion, it was evident that the farm efforts came only in part from internal operational intentions. An important role was played by the well-meaning acceptance of so-called "external expectations." The production increase plan turned out to be strained because of the expectations of the guiding organs chiefly on those farms where they had originally planned (in the medium-term plan) a lower rate of growth. On basis of all this, it appears that the guiding organs in the field did not always correctly mediate the ideas of the central government. In many cases the local organs interfered mechanically in the planning and the development of the production structure without adequate survey and knowledge of the economic background. To tell the truth, there are some managers who are indecisive and willing to approve outside expectations, thinking thereby to reduce their own responsibility.

Deteriorating Use of Means

In the working out of the plans of the present five-year plan period, it was already regarded as a requirement that quantitative efforts and capacity expansion at any cost would be replaced by a more efficient use of existing resources.

Of the 60 queried farms only 6 increased production chiefly through expanded investments. Thirty-eight farms did so through greater capacity, more organized work, and greater exploitation of means. Finally, relatively few farms, 20 percent of those queried, increased production exclusively through work organization, greater work intensity, and the transformation of the production structure.

Development efforts which ignored the effects of altered economic circumstances and regulators were primarily characteristic of the weaker farms. On most of the producer cooperatives, the "development" outlook takes precedence over the "efficiency" outlook.

On most of the queried farms, and here too we are speaking primarily of the weaker farms, means efficiency worsened. But the farms attributed this basically to the rise the cost of means. Other causes given were: "in the case of certain special machines, means utilization deteriorates because of the short seasonal nature of the use, while it improves in the case of machinery suitable for various kinds of work," and "with the increase in the performance of agricultural power machines, utilization declines."

But all this does not alter the fact that in the coming "development-source poverty" period only those farms will be able to develop which will discover the inner investment-saving reserves and methods of economic growth.

We must reckon with the fact that with the moderation of investments--given a certain passage of time--the consequences will be a moderation in the rate of production growth on the producer cooperatives. According to our view, however, the weak producer cooperatives do not have the conditions (including the intellectual conditions) to counter the decline in investments by exploiting to the desired extent the possibilities of plant and work organization.

Investment Structure

Because of the worsening of the means efficiency, there are many who regard the development demands of the farms thus far as excessive. It must be considered, however, that with efficient exploitation of the producer capacities created with the developments it will be necessary to carry out additional completion tasks, bearing in mind here primarily the accessory investments and circulating capital.

In 44 percent of the queried farms (in the period 1976-1979) the actual development rate lagged behind the plan, in 22 percent it exceeded the plan, and in 34 percent it developed in accordance with the plan. It was primarily the good farms that were able to fulfill the investment plans, or overfulfill them. In the "good" category only 2 of the 20 farms failed to fulfill the development plan. At the same time, sometimes the weaker farms were unable to realize even the relatively modest development notions.

Among the factors determining the fulfillment of production plans, the farms devoted particularly great attention to the development of the relation between production increase and investments. With their investments, the farms on one hand supplement and on the other hand expand their fixed assets. Even under the present economic conditions, most of the farms under study regard it as necessary to have investments for expansion purposes. This is so partly to replace the manpower that is flowing from agriculture to other branches of the economy and partly to make it possible to modify production structures according to market changes and increased efficiency requirements.

In 44 percent of the 60 queried producer cooperatives, expansion was strong between 1976 and 1979. On 40 percent of the farms supplementary and other smaller developments were realized. On 10 percent of the farms it was possible to realize only supplementatry investments, and on 6 percent of the farms not even that much. Forty percent of the producer cooperatives listed in the weak category were unable not only to expand but in some cases even to replace obsolete fixed assets. The latter problem was made even more difficult by the fact that manpower leaves from primarily the weak, poor-paying farms.

How Much Is It Worthwhile to Develop?

On the basis of all these things, one can feel the bidirectional economic interest according to which it would be good to reduce excessive differentiation among the farms but on the other hand the principle should be realized that scarce investment means should be for farms that use them efficiently. It is for this reason that agrarian economics is facing a dilemma, that is, over the extent to which it is worthwhile to develop weak farms since scarce resources can be used best on good farms. At the same time it is necessary to seek out those well known and new methods of plants organization, structural alteration and enterprise management with the help of which the weak farms also will be able to operate, without any particular supports, profitably for the national economy. This is true, for example, of share work, the increased role of household farming, and particularly the development of auxiliary industry activity.

The development of auxiliary industrial activity is justified, if for no other reason, because it has been shown that it is primarily those unfavorably endowed farms that could increase the level of their agricultural production which first stabilized their management with the help of nonagricultural activity. On weak farms, where necessary, it would be possible to build up small and medium production works and various kinds of service activities of a nonagricultural nature with the help of credits. We agree with Bela Czimbalmos' article on "Adjusting to Conditions" which appeared in No 33, 1980 issue of FIGYELO according to which nonagricultural activity is "at least as important to large enterprises interested in cooperation or to consumers as it is to agricultural cooperatives."

Solved Problems

In recent years cooperative investments have grown particularly in the value of machinery and equipment, vehicles and capacities. The reason for the lag in the expected efficiency improvement was that the increase in the circulating assets, which would make it possible to exploit the fixed asset capacity appropriately, was not sufficient. Most of the "good" farms among those studied have circulating assets adequate to production, while the "weak" farms have unused capacities because of the shortage of circulating assets. The circulating assets were sufficient on one-third of the cooperatives that were queried, but their permanent use causes financial problems.

The latter shows the view expressed by one farm, according to which: "Many producer cooperatives are marketing not because of favorable market possibilities but generally because of credit subsidies and time terms for payment."

This problem seems strange because up to now also there has been opportunity for cooperatives to establish the payment time for the permanent circulating asset increment in understanding with the bank, or in the case of a farm which was managing without bank credit to set its own time with only a reporting obligation. These conditions are still in effect, but beginning

1 January 1980 the conditions for extending circulating-asset credits have become more strict.

This illustrates how we can establish the foundations of an economic conditions system for the Sixth Five-Year Plan on basis of the experiences in the plan period now nearing completion.

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HUNGARY

FUTURE OF SMALL SCALE AGRICULTURAL PRODUCTION STUDIED

Budapest FIGYELO in Hungarian 13 Feb 80 p 13

[Book review: "The Situation and the Future of Small Scale Farming" edited by Gyula Varga, Mezogazdasagi Kiado, 1979, 250 pages]

[Text] In the 1970's--aside from the standstill of 1976--production by small farming increased constantly even when calculated at unchanged prices, but at the same time its ratio as compared to large scale farming declined. In this same period, the differentiation of small scale farming also began. The commodity producer and specialized small farm became more and more differentiated from the self-sufficient farm and increased in ratio, and the basic motivation of the activity was income incentive.

One of the important questions of the more recent developmental phase of Hungarian agriculture is how the commodity production of small producers can be increased effectively, and how the division-of-work advantages can be exploited more than before between small and large scale farms. In a book published recently by the Agricultural Publishers (Mezogazdasagi Kiado), the people's research group of the Agro-economic Research Institute sought for answers to this question.

In the first part of the book, they studied the role of small farming in socialist agriculture--beyond the household characteristics--and discussed features of the Soviet, Bulgarian, Czechoslovak and Romanian household and auxiliary farms. In contrast with earlier research methods, the third and fourth parts of the book, which form the backbone, emphasizes the branch analysis of small scale farming. Among the branches of small scale farming which are on the rise we should mention the raising of work-intensive vegetables and modern methods of pig and poultry breeding. According to the statements of the authors: "Undoubtedly, the most important branch today in small scale farming is pig raising...the ratio and volume of commodity production has also grown vigorously, and with this self-sufficiency has also been deemphasized."

The picture the authors show of fruit and grape production by small farmers is less favorable. Particularly critical is the situation of small scale farming in vineyards in the historical grape areas. The importance of the third livestock branch--cattle breeding-declines significantly in small scale farming.

It is the merit of this book that the authors, in presenting gardening and livestock breeding, also analyze the cost and income relations of the small scale farms engaged therein.

In the concluding portion we can read about the means for the economic regulation of small scale farming. The authors draw attention to the advantages that can be expected from improving division of work and cooperation between small and large scale farming, and they also extend themselves to a discussion of the circumstances that inhibit its realization.

This book, which was edited by Gyula Varga, can be reviewed very readily, its line of thought can be easily followed, and the line of argument is convincing. The latter can be attributed to the rich source materials and to the well-composed tables. This new publication can be an important manual for economic and agrarian politicians dealing with the questions of small scale farming.

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EXPANSION OF SMALL-TONNAGE CHEMICAL OUTPUT SUPPORTED

Gdansk GLOS WYBRZEZA in Polish 28 Jan 80 p 4

[Article by Tomasz Pszczolkowski: "A Stake in Chemical, But What Kind?"]

[Text] At the beginning of the 1970s the chemical [industry] was one of the most dynamically expanding industries. Today, lagging investments are the subject of universal concern despite objectively great progress in the production of many products, especially high-synthesis products (salts, acids, bases, fertilizers, plastics, fibers, etc.).

Today, knowing the chemical section of the 1980 plan, it can be said that we face entirely new conditions from those in the 1970s. Above all, investment conditions, procurement as well as payment, are different. An analysis of these conditions shows not only the necessity of change but also the direction of change.

The 1980s, especially the first half, will be characterized by a slowdown in the investment tempo and scale, as well as by changes in investment structure.

The overall economic situation forces us to treat investment preferentially, committing as little capital and time as possible but at the same time making investments that return invested resources quickly. For the time being, expanding the high-synthesis chemical industry is completely incompatible with these requirements.

In addition, "major" chemical industries devour much raw material, primarily oil. Current supply conditions make it almost impossible to achieve those production volumes of basic petroleum products obtained via processing that were specified in the chemical program at the start of the 1970s, that is, when oil was cheaper and it was possible for Poland to import relatively large amounts of oil.

Logic tells us (after all such a postulate is in the guidelines) that so long as we must limit imports then we should produce from oil that which can be sold most profitably outside Poland, that is, small-tonnage chemicals such as lacquers, dyes, synthetic adhesives, magnetic tapes, pharmaceuticals, cosmetics, reagents, detergents and so forth, especially since these branches of chemistry are the most profitable vis-a-vis investment. There are many reasons for this, but the two most important ones are short investment cycles and versatility of machinery and equipment, which permit serial production. At the same time, it does not pay to produce equipment for high-synthesis chemicals because of their uniqueness.

Although expanding small-tonnage chemistry for its investment profitability is not an overwhelming argument, it is the only solution. That it is worthwhile to pursue actively these "light" branches of chemistry is determined by the scale of domestic requirements and export possibilities.

Presently, domestic production does not satisfy domestic needs for any of the basic groups of low-tonnage chemicals. In effect we must choose between two bad solutions, that is, either accept the shortage with all its negative consequences for supplying industry and the market or else to strive for imports, imports that are very expensive, much more expensive than importing the primary raw materials. In practice we apply both solutions simultaneously, that is, we can only reduce the shortage by means of imports. This happens because the divergence between domestic production and domestic needs is very large, and to cover the gap fully via imports is simply not possible for us.

As proof of this, Polish industry, for example, supplies only 30 percent of the demand for feed supplements (farmers claim that the lack of feed supplements is a significant deterent to expanded animal husbandry). Furthermore, domestic industry supplies only 40 percent of magnetic tape needs, 50 percent of synthetic adhesives, 50 to 80 percent of dyes, lacquers, herbicides, pesticides, photochemical products and chemical agents, and just a little greater percentage of pharmaceuticals and cosmetics. In other words, expanding small-tonnage chemicals not only will eliminate many bottlenecks in other industrial activities and expand market supplies, but it will also decrease or simply eliminate costly imports. If in the end we merely eliminate imports then our highly profitable exports will expand!

Analyses of the world market for chemical products show that by the mid-1980s dye exports may increase 30 percent; paints, lacquers and household chemicals by 50 percent, cosmetics and pharmaceuticals by about 60 percent, chemical reagents by about 85 percent, so-called auxiliary chemical agents by 200 percent, and synthetic adhesives by 300 percent. Of the basic branches of small-tonnage chemistry, probably only magnetic tapes, feed supplements and photochemical products will not increase their exports. Today the possibility does not exist, but who knows what tomorrow will bring? The trends in worldwide trade in chemical products since the start of the oil crisis leads one to conclude that the demand for these presently unmarketable products will increase, especially in the developing countries.

It is no secret that to produce fertilizers, fibers or plastics it is necessary to have raw materials and know-how, but for small-tonnage chemicals the possession of raw materials and purchase of licenses is not sufficient. Above all, it is necessary to have extensive and good scientific-research and technical potential and appropriate experience, or to sum it up, a highly cultivated knowledge of chemistry passed on from generation to generation. It is known that the value of human thought will always exceed the value of raw materials, and this proportion will be reflected in the price of a finished product. Poland, as a country with a chemical tradition spanning many, many years (especially in the light branches, for example, in the production of dyes, cosmetics and medicines) has the potential to become a member of that small club of countries that export highly processed chemical products.

In addition, a system is entirely possible in which a well-structured small-tonnage chemical industry will not only earn money needed for its essential imports and money needed to import high-synthesis products, but it will also accrue a foreign exchange surplus.

Together all of this forms a logical chain of arguments for lightening the program to chemify the national economy. In as much as conditions have changed diametrically, the economy must be chemified differently because it is necessary; that is for sure. In other words, a realistic strategy should be based on resources that are adapted to the circumstances. The flexibility of management, among other things, and its corollaries, its efficiency and effectiveness depend on it.

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PROSPECTS FOR SOLAR ENERGY INSTALLATIONS ASSESSED

Bucharest REVISTA ECONOMICA in Romanian No 50, 14 Dec 79 pp 21-23

[Article by Teodor Stefan Teretean, Engineer, Research Institute for Construction and the Construction Economy: "Solar Energy - A Tremendous Resource"]

[Text] The problem of using solar energy as an alternative energy source for heating of buildings and supplying domestic hot water has been first tackled in our country several years ago; since then large amounts of money have been invested for research. Concrete steps have been taken, in view of the fact that more than half the surface of the country enjoys more than 1800 hours of sunshine per year, which is the absolutely necessary lower limit, both for the currently proposed industrial-scale installations, and for the present manufacturing methods of the equipment used for the collection and storage of solar energy.

Favorable conditions for the utilization of solar energy.

Several regions of Romania are immediately available for the collection of solar energy. They include: South Cimpia, Baragan and Dobrogea, West Cimpia, and the Banat, most of the Transylvanian Plateau, the Moldova Plateau, etc. The Romanian coast and the Delta of the Danube have special characteristics as the sun shines on the average 2,400 hours per year, which exceeds 50% of the maximum possible sunny hours per year. Obviously, there is a directly proportional relationship between the average number of hours of sunshine in a given zone of the country and the potentially reusable energy; this relationship is expressed numerically by the data in Table 1.

In view of these data on the one hand, and of the manufacturing potential for constructing in our country the equipment needed for solar collectors on the other hand, it can be stated that on average, the use of a solar collector resembles in a fuel economy equivalent to 70 kg cc/m^2 year. This value is generally adopted in calculations involving new industrial and socio-administrative projects, currently on the drawing boards of the Economic Ministries of the Central Government and of the corresponding agencies at the county level, the execution of which is being initiated this year.

Table 1.

The average number of hours of sunshine in a given zone of the country	The energy potential that could be installed, expressed as specific fuel saving (kg cc)/m^2/year)
More than 2,400	More than 88
2,200-2,400	30 -88
2,000-2,200	72 -80
1,800-2,000	65 -72
below 1,800	below 65

The possibility of being able to use from now on definite data in the design of new solar domestic hot water installations is the natural consequence of the successful completion of the research work in this field, which was started as early as 1972. Thus, during the summer of 1976, the first experimental solar domestic hot water station started to operate at the shower rooms of the Mangalia navy yard, and thus the workers of that installation became the first beneficiaries of water heated by solar energy. The first passive-system solar house (CS1) was built also in 1976 at Cimpina, on the basis of plans prepared by the Research Institute for Constructions and the Construction Economy and in 1977, the first active-system solar house (CS 2) started up; this structure represented the beginning of a whole series of experiments in the use of solar energy for the heating of buildings. During the summer of 1978, the first experimental demonstration pilot plant at Saturn-Mangalia was placed in operation; during the summer season, it supplies about 120-140 m^3/day of hot water to three hotels at the resort town at a fuel saving of about 84 tons cc/year.

At the same time, the Cimpina experiments prove that a passive-system solar house helps to save about 40 to 50% of the fuel consumed during a season for heating apartments, while an active-system solar house saves up to 60% of the winter consumption of the fuel. In addition, the Saturn-Mangalia experiment revealed that about 65-75% of the hot water needs of hotels serving 1,200 persons may be supplied by a solar station with about 1,000 m^2 of solar collectors.

In view of the experiments carried out during these years and the results obtained at various installations, it was decided that starting in 1979, solar domestic hot water will be made available rapidly throughout the national economy. Several types of installations are under consideration today:

- installations which provide domestic hot water for the social lounges of industrial buildings, in which the solar collectors are incorporated within the structure of the clerestory on the face oriented towards south-east-south or south-west;

- installations which provide domestic hot water in apartment units, (P + 4 type blocks with 500 or more apartments), in which the solar collectors are placed on the apartment block platform (in 1980, 3,742 apartments in P + 4 type blocks, currently under construction in settlements located in 8 counties of the country - Constanta, Ialomita, Dimbovita, Timis, Ilfov, Teleorman, Prahova and Arges - will benefit from domestic hot water supplied by this method);

- installlations to supply domestic hot water for hotels at the seacoast (the construction of a solar plant to supply hot water for a group of hotels with the capacity of about 3,750 places at the Neptune station will be started in 1980);

- installations for supplying domestic hot water to buildings which are owned by organizations (during the summer of 1979, the building of the general inspectorate of the Capital City Police Department was equipped with the first installation which heated water by means of solar energy).

Of course, these types can and must be diversified to take advantage of the new gains of research, design, manufacturing methods and operational experience during the immediate future. However, all the factors involved in the technical and economic decision-making process must be brought into play in a harmonious and coordinated manner.

The cost of the installations: a brake ... Why?

The necessity and the convenience of using solar energy as an alternative energy source do not require any more proof. Therefore, all areas in which domestic hot water installation could be used should be indicated. However, there are some shortcomings. One of the most frequently heard objection is the relatively high cost of the needed investments, increasing the cost of the energy thus generated. It is indeed true, as revealed in some cost calculations of various types of installations, the unit energy produced by solar means is possibly up to three times more expensive than the unit energy generated by conventional fuels. Thus, for the first four prototype installations with capacities of 8,000, 25,000, 60,000 and 80,000 liters/day produced domestic hot water at an energy cost of about twice higher than with a conventional energy source. Still keeping in mind that the present cost of fuels is not fixed, and is expected to increase in the near future, it cannot be denied that solar installations will also become competitive.

However, it is still imperative to analyze the investment costs, in order to find a way to reduce them. Table 2 shows the reduction of the elements involved in the investment needed for a domestic hot water plan based on solar energy as anticipated in the next three to five years.

Table 2

Component elements of the specific investment	Actual specific cost, %	Specific cost to be reached during 1982-1984, %
Cost of the solar collector	100	50
Secondary structures, supports, stiffeners, etc.	100	30
Automation equipment	100	80
Auxiliary equipment, pumps, containers, etc)	100	66
Thermal insulation	100	100
Labor cost for installation	100	50
TOTAL:	100	50

This table also presents the percentual structure of the unit cost in 1980 and during the succeeding period. The analysis refers to a situation, in which the absolute value of the prices dropped to their one-half level. It may be seen that the contribution of the secondary costs to the total value of the unit cost is reduced (by using less metal and cement for the supports) while the relative share of the automated systems related with the solar plants increases, improving simultaneously the heat insulation of the ducts, as is necessary and natural.

Various less expensive specific plant structures,

It is also important that we indicate how we intend to reduce by at least 50% the specific costs of solar plants, primarily in the following manner: improving the performance of the solar collector by: replacing the aluminum (the currently used structural material) with cheaper materials (steel, plastics, etc); using less expensive heat insulators; increasing of the thermal efficiency (yield) of the collector by reducing losses in the collected energy;

Reducing the secondary structural systems by: exploying existing structures for placing the collectors; use of the transport ducts of the solar energy absorbing agent themselves as support elements; using collectors incorporated within the structural elements of the buildings, substituting them for the construction materials that they displace;

Improving the automation system by simplifying the design of the involved system and by eliminating noneconomical materials;

Using specifically designed and tested auxiliary solar plant equipment (heat exchangers, pumps, vertical storage systems, etc);

Reducing the labor required for assembling the plant by: improved training of the personnel assigned to the mounting of the solar units; mechanization of the mounting operation, etc.

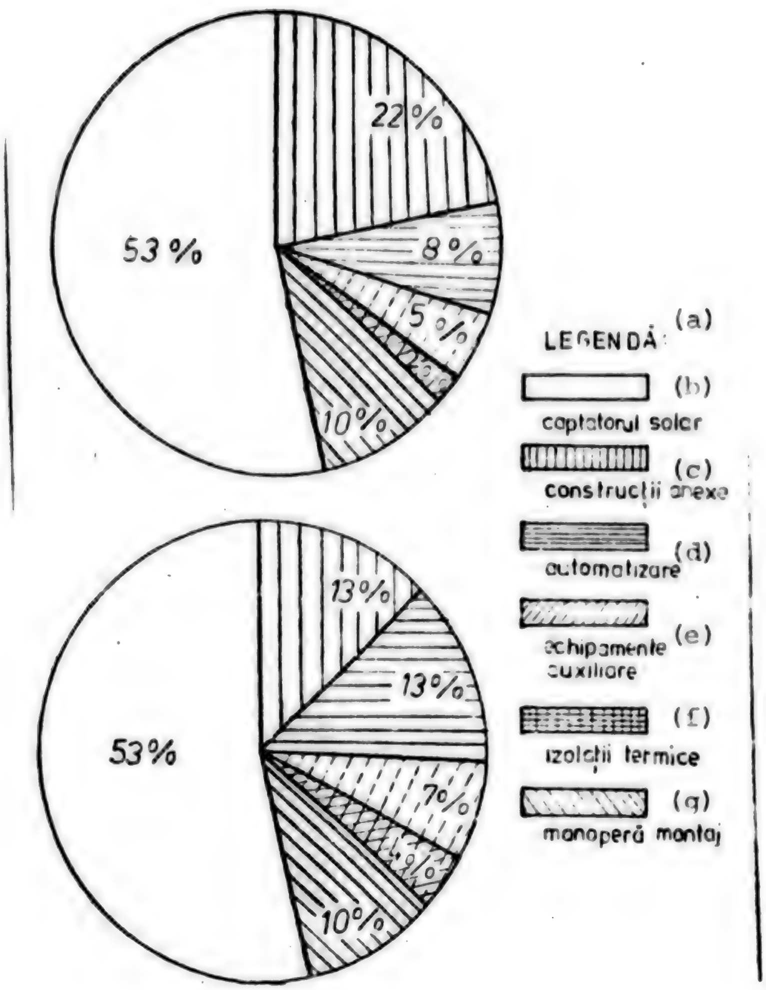
An essential aspect of the effort to reduce the cost of solar installations lies in the interpreted practice of companies which currently supply solar equipment (solar collectors, etc.) of adding to their costs profits which are too high, when considering the national interest to promote new systems based on the energy supplied free of charge by the sun. We believe that the competent agencies (the Ministry of Finance and the Ministry of the Machine Construction Industry) should impose in this case an economic policy which would help to promote the production of this equipment at a cost level based on strictly limited profits.

Obviously, the cost of the energy generated is directly related to the value of the investment. As my example, the following simplified relation may be used to calculate the cost of the energy generated (C);

$$C = \frac{1}{E} \left\{ \frac{I}{n} + C_{an} \right\} \qquad (1)$$

in which E is the annual savings of fuel realized by the plant in tons cc/ years, I is the total amount of the investment in lei, n is the service life of the plant in years; and C_{an} is the yearly operating costs of the plant.

Figure 1



Top graph - Cost distribution for the year 1980

Bottom graph - Cost distribution for the years 1982-1984

(a) - Legend; (b) - solar collector; (c) - secondary structures;
(d) - automation; (e) - auxiliary equipment; (f) - thermal insulation;
(g) - labor cost for installation.

Thus, the cost of energy decreases with the reduction of the investment (I) and the increase of the collected energy (E) due to the improved collection efficiency of the solar panels. At the same time, the lengthening of the service life of the solar plant, and in particular, of the solar collectors, offers another possibility to lower the price of the supplied energy.

Finally, the cost of the energy generated by a solar plant may be also reduced by further lowering the cost of the solar collectors, letting those who will benefit from the solar plant build the collectors themselves. Therefore, in view of the currently used solar collector produced by the I. F. Gaiesti company, the Research Institute of Construction and Construction Economy, Bucharest, designed and provided the technical documentation for the production of four other types of solar collectors, including a variant which does not contain any subassembly with a special shape made of extruded aluminum (the external project standards were entrusted to the I. F. Gaiesti Company). Although these collectors are by about 5-10% more expensive, and their thermal efficiency is by 3-5% lower than the aluminum collectors manufactured by the I.F. Gaiesti Company, they present the advantage that they can be built locally, in shops possessing only the minimum equipment, using conventional materials (0.8 mm thick black panels, 3/8" or 1/2" black or galvanized pipe, conventional thermal insulation, and safety or ordinary glass).

All in all, it can be stated that as of now, the cost of the energy generated by a solar plant can be lowered by means of technical and administrative measures which are within the reach of any economic organization. Thus, the task to achieve fuel savings of about 750,000 tcc by the end of the next Five Year Plan, by means of solar plants, at the national level as it has been planned and accepted, appears to be fully realizable.

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AUTOMATION, COMPUTERIZATION PROGRESS IN INDUSTRY

Bucharest REVISTA ECONOMICA in Romanian No 49, 7 Dec 79 pp 8-10

/Article by Engr M. Sirbu, deputy scientific director of the Research and Engineering Institute for Automation, Computer Technology and Telecommunication (IPA-TC-T)/

/Text/ The documents of the 12th Party Congress forcefully point out the need for further expanding mechanization and automation in production, a drive which under the next five-year plan must be fully instrumental in raising labor productivity at an average annual rate of 7-7.5 percent. Provisions have been made for completing fully automated lines specifically in foundries, forges, sections for heat treatments and other sectors with arduous jobs, also for using multifunctional aggregate blocks, industrial robots, microprocessors, and so forth.

The emphasis on automation is fully justified, all the more so because in the context of the development stage of automation on a world scale, a problem which is claiming more and more attention involves completely reconsidering many production processes and carrying out these processes at a superior level in terms of quality and accuracy, without man's intervention or direct participation. One may state with certainty that automation has now practically penetrated all fields of production, gradually taking over a whole array of activities of the directly productive and auxiliary staff, of the administrative, designing and even managing staff.

In all industrially developed countries special emphasis is placed on automation of production processes. Rapid rates of introducing automation in these countries were made possible only because of the attention paid to developing major centers for designing automation systems and equipment for the study of the processes to be automated, building an industry for automation units and equipment, and training knowledgeable personnel for completing and operating the automated installations. Expansion of automation and hierarchized management of large industrial complexes (combines, groups of industrial facilities, and so on) poses paramount problems in the area of automation. A pressing matter involves greater productivity in all sectors of activity. Another problem which claims special attention involves not only greater labor productivity but also better utilization of energy, fuels, raw materials, transportation facilities, and so forth. Each industrial branch is making great efforts to raise productivity by advancing and refining specific techniques and local production processes, but all, regardless of the field involved, must to this end also focus on using upgraded automation systems and facilities, which will permit even better management of production processes.

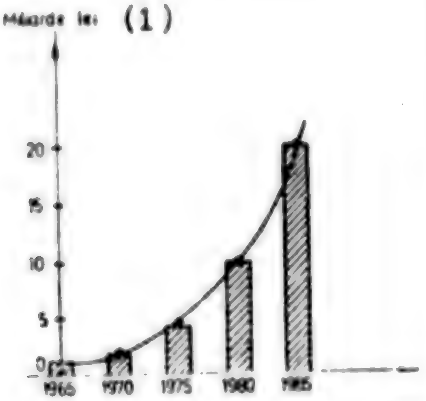
The set of measures outlined in Romania by the party and state leadership has in the last 10 years involved outstanding tasks on diversifying the lines for encouraging technical progress, with the emphasis on mechanization and automation of production processes and gradual transition to computer-based management of production. The special attention which the party and state leadership pays to expanding the country's industrial potential is inextricably linked to broader and broader automation of production processes in the overall economy, a factor which is characteristic of the stage of building a multilaterally developed socialist society.

Modern Base of Automation Facilities, Computer Technology

Proceeding from the well-known fact that large-scale use of automation and computerization of production are essential factors of a modern economy and that automation provides the technico-material base which is indispensable to the tremendous growth of the productivity of materialized labor, our party and state have placed special emphasis on the accelerated growth of the industry which turns out automation and computerization facilities. For instance, the output of automation and computerization facilities has grown at a rapid annual rate: more than 25 percent during the 1965-1980 period. Under this five-year plan production in this area has diversified and modernized significantly as a result of turning out a great number of new items based especially on domestic designs. The list of products designed for automation and computerization of production processes now largely meets our economic needs and the volume of imports in this field has decreased continuously.

A powerful industry of automation and computerization equipment has developed during this period within the framework of the Ministry of the Machine Building Industry. It is concentrated in two industrial centrals: the Industrial Central for Telecommunications and Automation Equipment (CIETA) and the Industrial

Central for Electronics and Computer Technology (CIETC). These centrals include well-equipped specialized enterprises which utilize modern technologies and highly qualified personnel. The conception of equipment and systems for automation and computerization of processes is uniformly materialized through the Research and Engineering Institute for Automation, Computer Technology and Telecommunications (IPA-TC-T).



[illegible] amica productiei de mijloace de automatizare si de tehnică de calcul

Figure 1. Dynamics of Production of Automation and Computer Technology Equipment

Key:
   1. Billion lei

Domestic research underlies the production and utilization in industry of systems for automation and computerization of production processes, with Romanian-made facilities being used in a proportion of 85-90 percent. For instance, during this period, automation equipment for major units in several industries was supplied and put into operation, under complex delivery through CIETA. This equipment included component facilities of big chemical combines at Pitesti, Rimnicu Vilcea, Borzesti, Slobozia, Tirgu Mures, in the power industry -- steam power plants, power producing units, thermoelectric power stations, at Rovinari, Turceni, Palas, and Braila, in the metallurgical industry -- facilities for adjustable electric actuation for the iron and steel combines at Galati and Hunedoara, in the building materials industry -- high capacity cement plants at Fieni, Hoghiz, Deva, Tasca, and Medgidia.

Automation facilities were turned out for the machine building, mining, light, and food industries, for agriculture and for the sector of services. Export offers and deliveries have included more and more automation facilities in the form of complex deliveries for cement plants, thermal units, petrochemical installations and various automation units for the German Democratic Republic, the People's Republic of China, the Soviet Union, Czechoslovakia, Cuba, Egypt, Iran, Yugoslavia, Tunisia, Pakistan, Syria, Jordan and other countries. Cooperation has been expanded in designing and delivering exportable equipment for third markets with the German Democratic Republic for cement plants in Yugoslavia and Bulgaria, and so forth.

Proper provision of the economy with the required amount of Romanian-made automation facilities for all the economic branches posed the problem of producing a very diversified range of components and units capable of optimally operating under the specific conditions of the process involved, on the one hand, and, on the other hand, producing these facilities in the context of a uniform concept and marked standardization, for the purpose of efficient and profitable production and operation. To this end, all the concept focused on turning out unified systems and uniform families, designed in a modular manner, which permit easy coupling of components and use of identical elements to obtain equipment and systems destined for various industrial applications. The automation facilities in the process of production and for whose production arrangements were made under the 1976-1980 Five-Year Plan are incorporated in the "System for Automation Components and Units," approved by the Council for Coordination of the Machine Building and Metallurgical Branches. The system ensures an advanced level of unification and standardization of Romanian-made automation facilities and establishes the chief technological parameters for comparison with other makes on a world scale, the makers of these automation facilities and the years for commencing the production of the new items.

For the purpose of ensuring the implementation of the provisions under this system, priority programs were initiated under this five-year plan in the area of arrangements for the production of new automation facilities. These facilities include: new unified electronic and pneumatic systems for automatic control characterized by greater safety in operation and uses in normal and special environments, whose serial production began at the Bucharest Enterprise for Automation Components (IEA) and at the Birlad Enterprise for Pneumatic Automation Components (IEPA), automation units, electronic rotative speed variators and numerical control equipment for machine tools, whose production began at Automatica, Electrotehnica and IEA in Bucharest, unified sets of facilities for adjustable electric drive with thyristors for the metallurgical

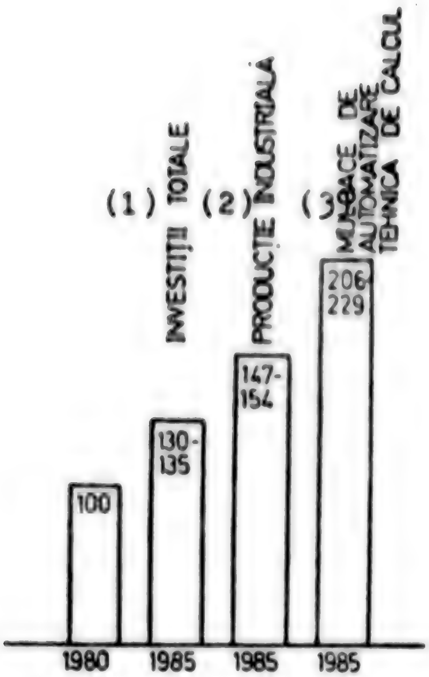


Fig. 2. Creşterea producţiei de mijloace de automatizare şi de tehnică de calcul în cincinalul 1981—1985

Figure 2. Rise in Production of Automation and Computerization Facilities Under 1981-1985 Five-Year Plan

Key:
1. Total investments
2. Industrial output
3. Automation and computerization facilities

and machine building industries, whose production started at Electrotehnica, production of unified systems for management of production with process computers and minicomputers and teleprocessing equipment, whose production commenced at IEA in cooperation with the Enterprise for Computers and the Enterprise for Off-Line Equipment.

Arrangement for Production Program: Guidelines, Priorities

The Directives of the 12th Congress of the Romanian Communist Party on the socioeconomic development of Romania under the 1981-1985 Five-Year Plan state that the primary guideline and basic task involves improving the technological and qualitative standard of all the material output through broadly promoting automation and computerization of production and the use of latest scientific and technical gains. For instance, under the 1981-1985 Five-Year Plan, it is expected that where industrial output will go up 147-154 percent and total investments in the economy, 130-135 percent, the production of automation and computerization facilities will increase at a higher rate, 206-229 percent.

The electronics industry will focus on the expansion of the production of automation and computerization equipment, microprocessors, industrial electronic equipment and electronic components. In light of the trends in the area of expanding automation and computerization of production anticipated in the Program for research, development and use of technological progress and in light of the tasks under the next five-year plan of providing the economy with automation facilities, the following guidelines are involved:

a. Further increase in the degree of automation in all the economic branches, with special emphasis on introduction of automated control systems with minicomputers and microcalculators, including hierarchized control systems in the chief industrial branches and continued marked introduction of automation in the branches which have a low level of automation;

b. Further upgrading of quality in terms of operation safety for automation facilities and systems, by only using components and subassemblies which are characterized by high reliability. Control technology will be strengthened in all stages of the operating process, from components to the final equipment, by introducing automatic test facilities. New modern systems will be turned out for automation and control of production processes. They will be based on the latest discoveries on a world scale and will be capable of operating under heavy work conditions and under special conditions;

c. Rise in the export of automation equipment and systems within the framework of deliveries of sophisticated facilities which our country will produce and in the context of the mutually advantages international cooperation programs in design and production of automation equipment. This will permit a higher competitive level of domestic-made products and the ensuring of an equilibrated foreign payments balance in terms of streamline.

A comprehensive program of arranging for the production of new equipment and systems for automation and computerization of production processes has been envisioned for the 1981-1985 period. For instance, provisions have been made for producing completely new types of automation equipment, which radically change the concept so far. It is a matter of producing "distributed systems for control of processes" which are made up of several types of modular units. The numerical control unit is the chief unit of the system. Actually, it is a microcomputer involving microprocessors. It can be locally mounted, on the facility or machine whose parameters must be maintained within specific limits required by the procedure. In contradistinction to analog regulators, currently in production, which require an independent regulator, for each parameter controlled, the numerical regulator can ensure -- by using the operation principles of numerical computers, the simultaneous control of several parameters by one apparatus. Moreover, the numerical control units can replace several analog regulators, providing important savings in terms of apparatus plus greater flexibility in operation by programs which can be easily altered.

The emergence of these new hierarchized auromation systems changes the concept of control rooms, ensuring a significant reduction of the area needed for locating the equipment, the disappearance of panels full of luminous charts, the marked reduction in the amount of connecting cables between the control room and the process, also a high level of modular capacity, highly increased reliability (generated by the high degree of integration of the components used). Furthermore, overall expeditiousness is obtained in controlling the process. The new techniques used in completing these modern systems will bring about great savings in terms of materials in short supply and energy consumption rates, both in supplier and user units. These systems will be efficient in all the economic branches, specifically in the major industrial centers.

The 1981-1985 period will also see the production of new types of modern automation systems for numerical control of machine-tools, aggregate blocks and process lines, provided with industrial robots, primarily characteristic of discontinuous processes in the machine building industry. The use of these machines will permit the expansion of some highly productive modern technologies in this field which is of outstanding importance to the economy. These systems will be based on miniature programmable automatic units and specific microcomputers and will also utilize higly integrated electronic components -- microcomputers and semiconductor memories. During the long-range period, there will be a gradual development of computer systems for the various branches. Moreover, this type of systems will be developed for management of production in major facilities of the chemical, machine building, metallurgical, power, light, mining and raw materials processing industries, transportation, and so forth.

Produced and completed so far on the basis of Romanian research and based on domestic-made computer facilities were automated systems for the control of processes with the FELIX C 32P process computer, whose serial production began in 1976 at IEA. The new systems which are now being designed and which will be supplied beginning in 1980 will be based on microcomputers of generation 4, developed and in the process of production, or for whose production an arrangement is in progress on the basis of local research at ICE (Independent 100, MC8, M18, CORAL), and equipment for automatic control of processes from the ECAROM family, produced with microcomputers on the basis of domestic research and whose production has commenced at IEA. These new types of facilities, which will underlie the systems that will be delivered under the 1981-1985 Five-Year Plan, no longer require specially equipped and climatized rooms, are characterized by great availability, and for similar functions involve a lower cost. Consequently, significant extra cost-effective results will also be obtained in both manufacturing and user units.

However, we must point out that expanded use of computer-based automatic control systemsin industry requires flawless operation of existing conventional automation equipment, knowledgeable maintenance and utilization by the user units, and appropriate technological discipline. Only these conditions can produce the expected economic results. To achieve this aim there is the need for a sustained effort of training the maintenance and operating personnel and ensuring well organized and prompt service. In order for the supplier to ensure the conditions of reliability and quality required for control systems, it is necessary to domestically ensure the base of broadly integrated electronic components with professional characteristics, off-line equipment with increased availability and rigid control in all the phases of the process of turning out the equipment.

Because the automatic systems of control, testing and strict supervision in all phases of the operating process play a special role in the process of production, specialized and universal testing equipment will be developed, including automatic testing systems with built-in microcomputers. These systems, which are characterized by increasing rapidity and safety in operation, ensure great savings in terms of skilled manpower and significantly reduce the testing and control time and ultimately the cost of the product. During 1979, the first automatic tester with built-in microcomputer, made by IPA-TC-T, Cluj-Napoca branch, was used in production, in the process of controlling the plates with integrated circuits in the production of numerical control equipment at DEA. The year 1979 also saw the production of the second automatic tester, characterized by better performance. The 1980-1985 period will see the implementation of a complex program for developing a family of automatic and semiautomatic testers for the control of electronic equipment for automation and computerization. For the purpose of ensuring the promptest and broadest introduction of automatic control systems in all economic branches it is necessary to itemize in the plan the units under the 1981-1985 Five-Year Plan which will be provided with these automatic systems with built-in microcomputers.

In light of the significant designing capacity required for completing the very complex tasks specified on a long-term basis, it is necessary to more consistently ensure the integration of the designing forces in education, research and production for accomplishing the tasks outlined in the uniform national plan. Moreover, it would be useful to expand and disseminate the method of joint collectives that obtained good results under this five-year plan (education, research, production). This will permit to shorten the periods of arranging for the production of new items. In the same context, we must expand the facilities for developing the basic and applied programsfor automatic control systems with microcomputers. In this area there is the need for further organizing a close cooperation between IPA-TC-T, the Central Institute for Data Processing and the other institutes in this branch for the purpose of producing standardized program systems characterized by the highest possible level of reuse.

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ROMANIA

MEASURES TO INCREASE EXPORT OF COMPLEX INSTALLATIONS

Bucharest REVISTA ECONOMICA in Romanian No 49, 7 Dec 79 pp 16-18

/Article by Gheorghe Stavaru, ICE Contransimex/

/Text/ In compliance with the tasks which result from the Directives of the 12th Congress of the Romanian Communist Party, on upgrading Romania's activity of foreign trade and international economic cooperation, it is imperative, as a major goal, to promote complex export of turn-key economic facilities, completion of projects and engineering service abroad.

The emphasis which ought to be placed on this sector of Romanian export is tied in with a few basic characteristics of these projects. In the first place, it is a matter of the active role of complex exports in promoting Romanian exports of machines and installations. We deem it necessary to dwell on the specific advantages of international contracting in promoting export of building equipment (bulldozers, scrapers, compacting rollers, excavators, crushing plant, concreting plant, dump trucks, and so on), of building materials (cement, reinforcing steel, and so forth), and of some accessories characteristic of construction sites, which are nonexportable as such; the export of these items, by incorporation into the projects completed or by their being used in completing the projects, occurs in the context of efficiency which is much greater than in the case of direct export. International practice shows that in most cases, the marketing of these items proceeds at prices which exceed by 50-100 percent the foreign prices obtained in the direct export of construction materials, machines, and installations. In the second place, complex export implicitly involves and includes supply of licenses, engineering, know-how, technology and engineering projects, research and designing activities, technical assistance and so on, a "commodity" which is highly appreciated on the world market and which sometimes may represent up to 25 percent of the total value of a project.

By the volume of deliveries and the importance of the projects for the customer, complex exports engender a close cooperation between the contracting parties, for a long period, meant to ensure great stability for Romania's economic relations with partner countries. Moreover, considering their nature and scale, complex exports most often provide a favorable context for initiating economic cooperative programs in the most diversified forms, with the Romanian formula being among the most appreciated by our partners in developing countries.

We must emphasize that Romania -- a developing country which is in full process of building a modern industry -- already has obtained outstanding accomplishments in the key branches of economic development and industrial promotion. Moreover, it has a rich experience in completing investment projects and also the economic, scientific-technical and organizational capability required for completing facilities which figure in industrialization plans of developing countries.

Furthermore, the complex exports involve indisputable advantages for our partners, because of completion of the projects specified in the local programs for economic development, in the context of advanced technology and lessened financial effort, due to the supple cooperation formulas suggested by the Romanian partners; adequate training of local personnel needed for operation and development of the technologies put into operation; ensuring of the marketing of a part of the output obtained in the new facilities, involvement in export of some items which are traditional features in the foreign trade of the partner country, and so on.

Most Dynamic Sector of International Economic Cooperation

Romania, which bases its export of complex installations on well-known principles of our country's foreign policy involving respect for national independence and sovereignty, equality, noninterference in domestic affairs, and mutual benefits, is an interesting partner also as a result of the economic-legal context set up, which meets halfway any form of cooperation if this form benefits the parties and complies with the spirit and standards of international ethics and equity.

In this context, Romanian export of complex installations -- in essence completion of economic projects abroad -- has greatly expanded in recent years. It grew by a factor of more than 6 in 1979 versus 1974 and asserted itself as one of the most dynamic sectors of our foreign trade. Moreover, it involved profund structural changes in the context of growing diversification. A general survey of the distribution in terms of geographical areas and relations indicates the predominant orientation of these exports toward the developing countries, while also being significant in the area of the other flows of Romanian export.

The rapid increase in the export of complex installations is economically explained synthetically in the better utilization of the human and material potential of the Romanian economy. During 1978 the projects under way in the area of export of complex installations numbered about 100. Significant projects completed or in progress with the involvement of Romanian specialized units include: assembly lines and tractor factories in India and Iran; industrial complexes for logging and woodworking in Iran and Ghana; cement plants in Irak, Lebanon, and Syria; spinning mills and garment factories in P. R. of Congo, Sudan, and Tanzania; oil refineries in Syria, Jordan, India and Pakistan; hydroelectric power projects in Algeria and Iran; ports and airports in Morocco, Iran, Lybia, and Senegal; roads in Lybia and Irak; public works projects in Lybia, Irak, and Sudan, and so forth.

Construction-assembly abroad, especially known as international contracting, is an efficient and relatively new form of carrying out the export of Romanian complex projects, one which has rapidly expanded in the last decade. Incorporated into the structure of our foreign trade, together with the export of complex installations and respectively in the activity of international economic cooperation, international contracting has a few individual features, which distinguish it as a specific form of international economic interchange.

International contracting* distinguishes itself in the export of complex installations, in the first place by its purpose, which involves designing and completion of projects such as: ports, airports, railroads, freeways, tunnels, bridges, viaducts, dams across valleys, industrial and civil engineering projects, and so forth. Within the framework of this activity, the preponderant factor involves the completion of the facility proper, which totally proceeds in the partner country, with the deliveries of machines, installations and other items having the character of an entailed export.

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* In the context of a special surge immediately after World War II, as a result of the needs of young independent states for promoting national industries, a genuine, very specialized "market" of international contracting developed. There was a massive detachment of engineering companies and their forming powerful national companies (for instance, IHO in the Federal Republic of Germany; Syntec-Incofrance in France) and international companies with a specialized character, which later formed the International Federation of Consultant Engineers -- FIDIC. By consensus, FIDIC adopted standard contracts specifying the extent of the technical responsibility of the engineer and of the contractor plus all the other clauses which are specific to a contracting agreement. The contractors formed national associations for the purpose of avoiding mutual competition. A specialization of international contracting developed, concurrently accompanied by a phenomenon of structuring and hierarchization of contracting. Currently, there is an opposite trend, one of unification of the engineer's and of the contractor's functions into one factor, by offering the turn-key delivery of the facilities.

Proceeding from the experience accumulated in the process of completing domestic investment projects, from the possibility of better utilizing some facilities and specialized cadres in construction and assembly and in light of the indisputable advantages of this sector of the export of complex installations, Romania has promoted and will continue to promote a policy of continuous development of international contracting.

In triggering and advancing this activity agreements, protocols, conventions and understandings for economic and technical and scientific cooperation have been important factors. The last 5 years alone saw the signing of roughly 60 such documents, which expanded a favorable bilateral framework and also specified a number of concrete programs, whose completion terms were agreed upon between the specialized units of the partner countries.

Furthermore, the programs developed by the specialized Romanian enterprises, the permanent contact and direct bidding at international auctions provided the opportunity for highlighting the competitiveness of the Romanian offer and the technological capacity of our enterprises, determining factors in selecting the contractor.

The Romanian units' activity of international contracting has greatly expanded. It developed at an average annual rate of some 20 percent -- a rate which is higher than the average rate of Romanian export, and this has occurred in the context of a market which is characterized by keen competition.

How Is the Reputation of Exporter Built?

When surveying the experience of one unit, ICE /Foreign Trade Enterprise/ Contransimex under the Ministry of Transportation and Telecommunications, which is specialized in designing and completing projects in the area of infra- and supra-structure of transportation, one notes that as it contracted for projects in various developing countries, the company organized its activity in specific forms that differed from country to country, depending on the objectives set and the legal regulations of the states on whose territory the activity is conducted. Moreover, participating companies were created with local firms for the purpose of completing a particular facility, for instance: the joint venture Contransimex-Mamadou Sylla, in Senegal, for projects on expanding the Dakar-Yoff airport; SET-Contransimex, in Iran, for completing the Bandar-Shahpour barge harbor and other projects; activities were conducted with the assistance of specialized local firms in providing services (for example: engineering in Greece, involving development of surveys and complex projects for a section of railroad); action was taken directly, on one's own account, as a contractual partner of the state involved and holder of an international venture contract (for instance: completion of the Nador project, in Morocco); steps were taken to create a group of construction sites, with action taken directly on the market (for example: the Tripoli group of construction sites, which involves four construction sites which are specialized in road building).

In some cases, programs of economic cooperation proper, specifically in the Romanian formula, were initiated (for instance: the Ras Kebdana fishing harbor, in the process of completion in Morocco, is being paid on a counterpart basis by phosphate deliveries from the Moroccan state).

As a natural result of the direct undertakings on the foreign market and the procedures in contracting for completing new facilities and upgrading the organized completion of the facilities by utilizing all the methods for reducing foreign and domestic expenditures from the beginning of this five-year plan, Contransimex has succeeded in regularly exceeding, on an average about 20 percent, the annual plan assignments (in the context of the constant growth of these assignments) and in obtaining superior indicators of economic efficiency.

Impact of New Facilities on Expansion of Whole Economic Sectors or Areas in Partner Countries

The significance of these increases in terms of export of complex installations can be better illustrated by a few examples which reflect the actual matters involved in this kind of deliveries and also comprehension of the economic impact and the effect of entailing development generated by the completion of projects in the infrastructure of transportation and other areas on the national economies of partner countries. The first example involves the progress of cooperative relations with Morocco. This year saw the completion of the Nador Port facility, which had been partially commissioned early in 1978 -- the second major port of Morocco (second to Casablanca) and the first port on the Mediterranean Sea. It has a 2600 m long dyke, piers whose length totals about 1600 m, at depth ranging between 6 m and 13 m, and a harbor deck of some 76 ha. The port will be used for all the export and import of the northern part of the country, will concentrate most of the Moroccan fishing activity in the Mediterranean, will serve the proposed metallurgical complex whose construction has begun in the border area, and will carry out a large part of the exportation of agricultural products, an important sector in the Moroccan export pattern. By eliminating the impediments created by the current dispersal of the activities involved (which generates high costs caused by successive handlings and by procedures for transporting and transiting export products, for instance, export transiting of iron ore from the Rif Mountains and of agricultural products, mainly citrus fruit, through the Spanish port of Melilla), the new complex facility at Nador will result in the radical transformation of the Moroccan eastern area by promoting the economic development of the region, meant to have a profound impact on the country's socioeconomic growth.

Similar effects of entailing economic growth by linking vast areas to the new facilities of infrastructure involve other projects completed by Contransimex in developing countries, such as: the Bandar Khomeiny barge harbor in Iran, the Tarhuna-Beni Walid and the fishing harbor of Tripoli in Lybia, and so forth.

Guidelines to and Conditions for Proper Development of Activity

The Documents adopted by the 12th Congress of the Romanian Communist Party specify, as a basic guideline under the next five-year plan, Romania's active and efficient participation in the international division of labor and expansion of cooperation with other states in the areas of production, science, and technology. As party secretary general Nicolae Ceausescu indicated at the Congress, "we must expand the superior forms of economic cooperation, such as joint establishment, management and exploitation of industrial units, creation of joint companies for exportation of products, joint completion of economic projects on third markets, and other projects."

Applying these guidelines to the specific features of its activity, Contransimex focuses its long-term goals on:

a. Maintaining and expanding its activity in the area of relations where it already has gained experience, a fact which will permit competitive bidding and significant reduction of costs;

b. Developing the activity on new markets (for example Gabon and Syria) but without significant dispersal of personnel which would cut down the efficiency of the overall activity;

c. Diversifying its activity in countries with which we already cooperate, by contracting for different projects, a factor designed to permit a better utilization of work capacity.

Proceeding from the achievements obtained, from the experience gained so far, and from the difficulties encountered in developing the export of complex installations from Romania, we must constantly upgrade all the system of expanding this export.

Prepare Now the Exemplary Implementation of the 1980 Plan

As far as the legal and organizational framework is concerned, we deem it necessary to upgrade it along the following principal lines:

a. Concentration of coordinated completion of the projects in one decision-making center, eliminating the dualities overall domestic supplier-overall foreign supplier, overall domestic contractor-overall foreign contractor, and so forth;

b. Greater powers and responsibilities of specialized enterprises, designed to permit increased promptitude in decision-making and wise utilization of the possibilities of assigning the production, financial, and human resources among the projects;

c. Expanding computers and the responsibility of industrial centrals in regard to completion and attainment of the efficiency indicators of foreign transactions, in light of their organizational and productive capacity;

d. Greater flexibility in financing the completion of the projects and in creating possibilities for efficient use of the temporary financial availabilities by the specialized units themselves;

e. Economic steps which would result in material incentives for the specialized units in raising the importance of the net production indicator and minimizing foreign and domestic costs;

f. Upgrading economic indicators for assessment of the efficiency of the export of complex installations and merging them into a system which involves unified implementation in all the specialized units.

In the second place, we must continuously upgrade the activity of specialized enterprises along the following lines:

a. Better estimation of the foreign market and of the specific procedures;

b. Upgrading the technique of negotiating these deals (auctions) and commanding the trade facets, including better knowledge of the laws in the partner countries;

c. Use of modern and efficient methods for organization and management of the activity, beginning with the form of legal organization and ending with the application of the network-charts, the method of the critical path, the Gannt charts, the graph method, and other techniques in programming, developing, and monitoring completion;

d. Rationalization of foreign transportation activity and completion of this activity in the context of efficiency (routing and distribution on transportation ways, adequate formation of the commodity batches, and so on);

e. Prompt and constant monitoring of the efficiency indicators throughout the construction of a facility, by updating calculations, designed to improve the quality of decision-making.

The expansion of the export of complex installations in compliance with the overall economic tasks under the 1981-1985 Five-Year Plan -- the five-year plan of economic quality and efficiency -- stands out as an objective need, in light of the evident advantages of this sector of Romanian export and of the necessity for better utilizing Romania's economic potential.

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WEST GERMAN COMMENTARY ON ECONOMIC SYSTEM

Bonn DIE WELT in German 5 Feb 80 pp I, II (Europa supplement)

[Article by Carl G. Stroehm: "Tito's Model Is Working--Even if Haltingly"]

[Text] The Yugoslavs are not the only ones who have been asking in recent weeks whether their gravely ill head of state Tito really will be leaving his house in good order. In their conflict with Soviet communism, the "Titoists" have discovered their own path: The principle of self-management and the workers' councils. How does this system function, and has it proved a success--and will it also withstand possible challenges in the post-Tito era?

When in 1948 Marshal Tito offered resistance to Stalin and Yugoslavia was expelled from the "Cominform" bureau (the then Soviet-controlled association of communist parties), the Belgrade system was still a rather close copy of the Soviet model. At that time, Tito stood at the head of a more or less Stalinist nation and a party which was Stalinist at least in its organizational structure.

At first the Yugoslav communists made a virtue out of necessity, when following the break with Moscow they searched for an ideological legitimization for their parting. In doing this, they came across the anticentralist, syndicalist, cooperative-forming traditions of the workers' movement. It is no accident that Soviet criticism created the concept of "Yugoslav revisionism" for the Tito line. Because Tito--or rather, his ideologically schooled lieutenants Kardelj, Kidric, Bakaric, and Djilas--tried to continue on with those lines of development of the communist and socialist movement which had been smothered by Stalin and Soviet despotism.

Thus, they stumbled on the magic formula of the "workers' councils," which were to manage the factories in place of centralist burocrats. In 1950, the first law on workers' self-management was promulgated. For the first time in a communist country, the economic sector in the form of the enterprises and industrial organizations thus obtained certain prerogatives vis-a-vis the political sector. For the first time under a communist party regime, there was thus an autonomy of trade and industry over against political authorities.

The Internal Competition

The "workers' councils," which from that time on have been elected by the workers in Yugoslavia and which in their turn make decisions on the operation and management of the enterprises, were restricted in their powers at the outset. Up to today, Yugoslav self-management socialism suffers from the contradiction that a hierarchically organized communist party stands next to and above a decentralized administration which is autogenous and which tends to be antiheirarchic. The system is further complicated by the fact that in Yugoslavia there are not one, but six different national communist parties, which in turn must "come to terms" with one another.

The economic reform of 1965 already brought radical extensions of their areas of authority to the self-management organs. Production planning and investment autonomy as well as price policies (even though only within certain limits) were transferred from the central governmental authorities to the enterprises. Thus a system arose which the Yugoslavs call a "socialist free-market economy" and in which the central government lays claim to only certain jurisdictions in connection with providing a master plan.

To be sure, the political leadership also reserves to itself certain powers in the sector of the infrastructure, transport and communications, as well as heavy industry. Up to 1974, the Yugoslav self-management system had a predominantly social and economic character. With the new Constitution of 1974 and the laws ensuing from it concerning "associated labor," the self-management concept is being incorporated into the political system of the country. The delegates elected in the enterprises and individual branches of industry form their own "chambers" at various levels--in the community, the republic (province), and in the Federal Government--within the respective parliaments, which are thus socioeconomic fractions of a sort, whose duty is to look after the specific interests of the workers in these bodies.

However, the practical application of this self-management legislation is bringing about some problems. Edvard Kardelj, who died at the beginning of last year and who was one of Tito's most prominent comrades-in-arms, was in fact the creator and "visionary" of this new Yugoslav system. But at the same time he was prone--something which parhaps can be explained by his Slovenian origin--to lose himself in details and to complicate many things through an excessive systematizing. According to Kardelj and the official Yugoslav ideology, in the socialist society there are also pluralistic--that is, conflicting--interests.

But then what socioeconomic mechanisms are available to the labor forces in the enterprises, with which they can realize their legal rights?

In order to take advantage of the possibilities of the legislation on the workers' councils, the workers need not only a great deal of information, but also certain traditions in the battle for their rights. In Yugoslavia there appears here, as it does also by the way in many other contexts, a clear north-south difference: In Slovenia, Croatia, and the autonomous province of Vojvodina belonging to Serbia, where the workers' movement has a 100-year tradition and experience, the self-management legislation is taken seriously. Here the workers are also in the best position to fully utilize this legislation in practice.

In the north and west, the workers' council has a strong influence in the enterprises. Here, the managing director is primarily an executive organ. On the other hand, in the south--that is, in those areas and republics which do not have any industrial tradition and experience--the director is often the true "boss," who is able to manipulate the workers' council.

Critics of the Yugoslav system assert that the Belgrade ideologists intentionally have not solved a crucial contradiction: Namely, the polarity between a monopolistic communist party on the one hand and the pluralistic interests of industry and the society on the other hand, as they manifest themselves in the workers' councils and in the system of delegates.

The Right To Strike

This polarity leads to continued conflicts of interest. The question is left up in the air for the future: How can politically monolithic party structures be reconciled with the interests of workers and management (directors) without perpetual conflict in such a system? In the long run, will not either the party undermine self-management, or conversely self-management undermine the party?

In Yugoslavia there are organized trade unions which by law are obligated to defend the rights of the workers, particularly vis-a-vis the management and the directors. It is here that the Yugoslav unions already differ on a theoretical basis from the labor unions of the Eastern Bloc. To be sure, one gets the impression that in practice, the party is deliberately keeping certain trade-union structures relatively insignificant--namely, out of fear that a serious rivalry to the party could arise from this sector, if for example the trade-union leaders were to really carry out their role.

Also, the question of property has so far not been resolved clearly in Yugoslavia, either theoretically or even practically. According to the Belgrade economic philosophy, all enterprises and factories belong to the "society." A part of their control as well as their management is made over by the society to those workers who have "associated" their labor to an enterprise.

Likewise, the community or territorial authority on whose soil an enterprise of "associated labor" is established--and which makes available to this enterprise the land, the infrastructure, as well as welfare and tax accommodations--has command of a portion of the results of the enterprise's operations. But in addition there are also powerful creditors: Thus, for example, banks or other undertakings, which through financial manipulations suddenly are advancing into a position of power vis-a-vis the borrowing self-management enterprises--something which is by no means provided for "theoretically" in the self-management concept.

A clear demarcation of the rights of these factors, all three of which are indispensable to the functioning of an enterprise, has not yet ensued in practice. Numerous conflicts are arising from this. However, in Yugoslavia these conflicts are argued out openly and for the most part even in the public eye, because the Yugoslav communists--in contrast to the Soviets--do not believe in a conflict-free society.

One can consider the Yugoslav self-management system in its theory and practice from two points of view: First, from the aspect of its economic efficiency, and secondly from the side of its political effects. From the economic standpoint, Western experts have subjected many deficiencies of the system to a sharp criticism. Nevertheless, the fact remains that as an instrument of policy the Yugoslav system has stood the test up to now in this country. Even severe conflicts, such as for example the strikes which are allowed in Yugoslavia (in contrast to all other communist nations), have not led to consequences which threaten to break apart the system. Up to the present, Tito has not had to call out any tanks, either his own or foreign ones, against his workers.

To be sure, the complicated Yugoslav system displays some weak points. This decentralization can lead to economic selfishness on the part of individual regions or enterprises. An example of that is the supply difficulties of the 1979/80 winter, when there was suddenly no milk in Belgrade--because the "self-management enterprise" responsible for supplying milk preferred to export its products to Greece for foreign exchange, rather than sell them in its own capital city. Likewise, the supply of washing powder came to a standstill--because a Slovenian detergent firm (also, of course, a self-management enterprise) had prematurely spent its foreign exchange and could not buy any raw materials in foreign countries.

Yugoslav functionaries openly admit that the country has lived "beyond its means" up to now. Inflation and a raw-material crisis, coming from the West, are having their effects on the system. It is within a half socialist, half free-market system--which in some respects also embodies the disadvantages of both orders--that the Yugoslavs must get through this crisis. But this crisis does not seem to be unsolvable, as long as the Yugoslav leadership does not take a fancy to the idea of returning to centralist planning methods and thus replacing a possibly transitory evil by a permanent one. That is, one thing remains indisputable:

A number of communist parties--such as, for example, the one in China, but also those in Italy and Spain--have taken over certain elements of the Yugoslav self-management ideology into their own programs. Thus there is no doubt that this Yugoslav model, deliberately or not, represents a serious challenge to the concept of Soviet communism of the Moscow type.

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CONSTRUCTION OF HYDRO-ELECTRIC POWER PLANTS IN MONTENEGRO PLANNED

Zagreb VJESNIK in Serbo-Croatian 14 Jan 80 p 7

[Excerpts] In the year 2000 Montenegro will need almost 8 billion KWh of electric power, i.e., 4 times more than it is producing now. This is why, it is pointed out in Montenegro, in planning the construction of the electric power system, long term planning should be considered so that the production capacity would constantly increase in proportion to the growing needs.

A study about this, which refers to the period up to 1990, was worked out by the Institute for Technical Research of the Veljko Vlahovic university in Titograd. In this study the specialists at the Institute gave priority to the hydro-electric power plants on the Moraca river, whose construction could begin this year.

The specialists at the Institute are planning the construction of six small hydro-electric power plants on the Moraca river, which would yield about 1.2 billion KWh. Five plants would be built downstream between the Moraca monastery and Titograd, and one below Titograd. The construction of two power plants is also proposed in the Moraca river canyons, Andrijevo and Zlatica, with a capacity of 513 million KWh annually. This would necessitate the construction of a reservoir which would encompass a part of the Moraca canyon from Anrijevo to the Moraca monastery and would collect 280 million cubic meters of water. The investment for these plants would amount to about 1.9 billion dinars.

What about the thermal-electric power plants and the atomic power plant? The latter is not even mentioned in the plans up to the year 2000, and when one speaks about the thermal-electric power plants--for now only the one in Pljevlja is mentioned with about one billion KWh, which will go into operation in 1982, and at that time, according to the estimates of the specialists, Montenegro will have its greatest energy crisis.

However, the specialists at the institute are saying that this should not be the reason for starting the works for the second phase of the thermal-electric power plant too early, although the coal mine in Pljevlja has more than 230 million tons of coal reserves; [this amount is] sufficient for two thermal-electric power plants of 220 megawatts each to operate for 50 to 60 years.

However, the specialists are warning that the quality of the coal decreases the deeper that one goes into the Pljevlje coal mine. Therefore, although the specialists do not reject the idea of the second phase of the thermal-electric power plant, they think that the orientation should be toward more secure solutions, such as the system of hydro-electric power plants on the Moraca river.

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